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JOURNAL OF EDUCATION

ANUARY, 1954 VOLUME 136 NUMBER 4

AMERICA'S OLDEST MAGAZINE FOR EDUCATORS

PERHAPS a preview of some of the articles for our February issue would be of interest to our readers. They will include:

"New Hampshire Pioneers Firearms Safety Education in its Schools" — an unusual state-sponsored program in the important field of firearms safety, by Jack F. George.

"A-Camping We Will Go"—Dorothy Foster relates an unusual and successful class camping program at the Junior High school level.

"Why Physical Education?", by Frances W. Hogan, describes briefly a sound philosophy with suggested techniques in physical education for elementary school administrators and teachers.

Other articles will cover Elementary Art Education, Mathematics, etc. We hope that in the coming months, more and more of our readers will want to submit articles for possible publication in the future. Our Editorial Board will welcome them—and do include pictures and other illustrative material if possible!

JOURNAL of EDUCATION

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Our January cover girl is Miss Paula Tonra, a pupil in First Grade at the Murray Road School, Newton, Mass. When she gets those rubber boots on she'll start wading home through the deepest puddles. It's lots more fun when you have rubber boots, even when you find the puddle is a little too deep for them. This photo was furnished through the kindness of Mr. Charles O. Richter, Assistant Superintendent and Mr. William Winston, Coordinator of Audio-visual Education in the Newton, (Mass.) Public Schools. The picture was taken by Mr. Winston.

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IF ARITHMETIC IS TO BE REAL

Maxine Dunfee

Indiana University

Miss Driver is a faithful teacher of arithmetic. Because she did not understand arithmetic as a child and really did not like it, she is determined that her boys and girls at school will learn it well. She devotes an hour a day to the arithmetic class; she teaches every page of the textbook; she reads the teacher's manual carefully; she sometimes works late helping children who cannot get their lessons in school time. But somehow all this effort does not bring desired results.

After a wearisome day Miss Driver talks it all over with her friends. "I can't understand it. I literally slave over arithmetic. I never slight the class for anything else. I plan homework for most of the children, and I see that they do it every evening. I make a game out of the lesson whenever I can. I give prizes for good work. And what happens? Almost nothing. Jimmy constantly interrupts to ask 'Why' when he knows that some things in arithmetic can't be explained to children. Mary Ann persists in counting everything on her fingers. There are groans and complaints when class time arrives. And I'm sure the children's minds are everywhere except on the lesson. I do want my pupils to do well in arithmetic, but I am about to give up.

"I thought the teacher's manual might help me, but I can't begin to do all that it recommends. There just isn't time. If I were to take as long to develop each new phase of the work as the manual suggests, I'd never finish the book. Then, too, I don't have the equipment to work with. The manual talks about many kinds of concrete materials—felt boards, pocket charts, and counting devices. We're lucky here to have money for textbooks, paper, and pencils! I'm beginning to think it's all pretty hopeless."

Another Arithmetic Teacher

Miss Guide is another faithful teacher of arithmetic. Because she did not do well in arithmetic as a child, she hopes that her boys and girls will be more successful in their experiences with number. She is convinced, moreover, that children must understand the basic meanings in arithmetic and must have many opportunities to use arithmetic in real situations, if they are to find it interesting and worthwhile. Miss Guide has a daily arithmetic period, but much of the work with number grows out of the experiences children are having throughout the school day. Sometimes no more than twenty or thirty minutes are needed for introducing new skills and for meaningful practice. All the pupils have arithmetic textbooks which they use when they need special work in some phase of number concepts, and Miss Guide turns often to the teacher's manual for suggestions as she tries to further the development of each child's number concepts.

Arithmetic in Miss Guide's pleasant classroom seems to center around an old table almost hidden under its colorful load. Some of the contents of the table spill over onto window ledges and to the top shelf of a nearby bookcase. Here there are things to count, things to show place value of numbers, things to use in making number combinations, things to show fractional parts of numbers, and things to use in measuring. Things, things, things! This is the ARITHMETIC CENTER.

Dr. Maxine Dunfee has an extensive background in teaching on the elementary level. She is presently Assistant Professor of Education, School of Education, Indiana University, and her past experience has included four years at the State University of Iowa, as well as public school teaching. She has found time to co-author two Social Studies texts for fourth and fifth grades. In her free time, her hobbies are photography and water-color painting.

The objects on the table help Miss Guide make progress toward two of the goals she considers important in teaching arithmetic—to help children understand the number system and to help them find uses for numbers in real situations. She knows that arithmetic is something that happens in everyday life, not just a page of symbols to which children must react. She knows that if children are to realize that the arithmetic of school does not differ from the arithmetic of life, they must work with real objects from their environment in the kinds of situations which they meet daily.

What kinds of materials have Miss Guide and her pupils found for their arithmetic center? How do they use them to make arithmetic real?

Objects to Count

There are always some objects to count on the arithmetic table. Although many of the boys and girls no longer use counting extensively, there are still many who need help in understanding that counting is the basic number operation and that it is possible to find the solution to any number operation simply by counting. When they were younger, the children used these counting materials in learning to answer the question, "How many are there?" Now that they are older, they use them to discover new number facts, to solve word problems, and to prove answers to a variety of examples.

Most of the things to count were gathered together by the pupils. There are brightly painted bottle caps, old checkers, small wooden blocks, tickets, and coins. Lollipop sticks, meat skewers, and tongue depressors are ready to be tied into bundles of ten and bales of ten tens. A long string of one hundred spools, with every tenth one painted red, helps to develop many number understandings.

Sometimes the counting objects on the arithmetic table are special devices which help children understand the importance of ten as the base of the number system and the way in which place value functions. The hundred peg board (Fig. 1) which is easily made from a square of wallboard with nails for pegs, shows clearly that ten tens make one hundred and that every number larger than ten consists of a number of tens or of a number of tens and ones. Later on the pupils may use the peg board to show fractional parts of one hundred, too.

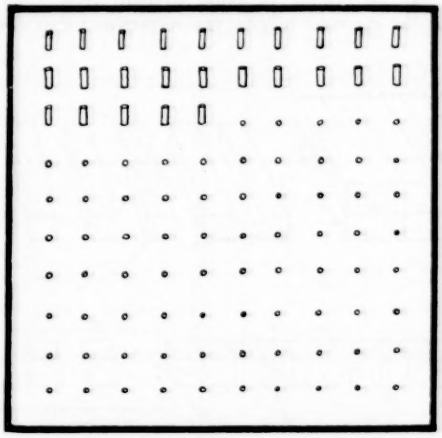

Fig. 1—Hundred Peg Board

Place Value Devices

The place value box (Fig. 2) shows how place value works. It is really three boxes fastened end to end. The box on the right is labeled *ones;* the middle box is labeled *tens;* the box on the left is labeled *hundreds.* Cardboard markers, tickets, or sticks are used with the box. Numbers of various sizes can be represented by placing single markers in the *ones* box, bundles of ten markers in the *tens* box, or bales of ten bundles of ten in the *hundreds* box.

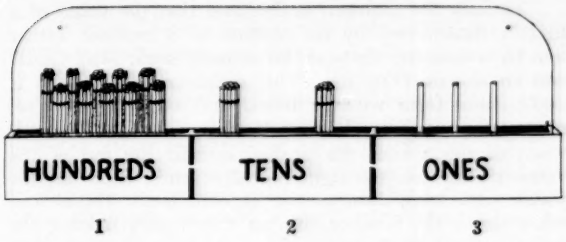

Fig. 2—Place Value Box

The stick board (Fig. 3) is a similar device, which many of the children prefer. The boys made the stick board from scrap plywood which they found at the high school shop. They cut three surfaces from the wood, each four inches wide and 12 inches long. In two of the boards they drilled identical holes. Near one end of each board there are nine holes just large enough for single sticks; in the middle of each board there are nine holes just big enough to hold bundles of ten sticks; at the other end of each board there are two holes just big enough to hold bales of ten bundles of ten or one hundred sticks. They assembled the surfaces horizontally between two end pieces, placing the undrilled board on the bottom to keep the sticks from sliding through the frame.

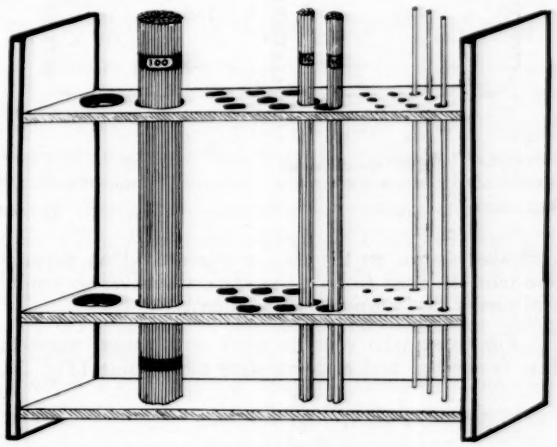

Fig. 3—Stick Board

As children use the place value box and the stick board, they see that they may count markers into the ones place until there are nine; that when the tenth is ready to be counted in, it must be bundled together with the nine ones and put into the *tens* place to make one ten. This moving of the ten one place to the left is an important part of the concept of place value. These devices show clearly that the value of a number may be expressed in more than one way. For example, the number 123 shown in the stick board above is represented as 1 hundred, 2 tens, and 3 ones; but it is easy to see that the number may be represented as 12 tens and 3 ones or as 123 ones.

To help the children understand that the value of a digit is determined by its position in a number rather than by a quantity that can be actually seen, Miss Guide uses an abacus (Fig. 4). This simple number frame is easily made from wooden beads and coat-hanger wire, put together as shown below. To represent a number the beads of the abacus are pushed toward the top of the frame. Those on the right represent ones; those on the middle wire, tens; those on the left, hundreds. The abacus below shows the number 306, an empty wire holding the tens place. It demonstrates that a single bead on the tens wire is worth ten times as much as a single bead on the ones wire simply because of its position, and that when

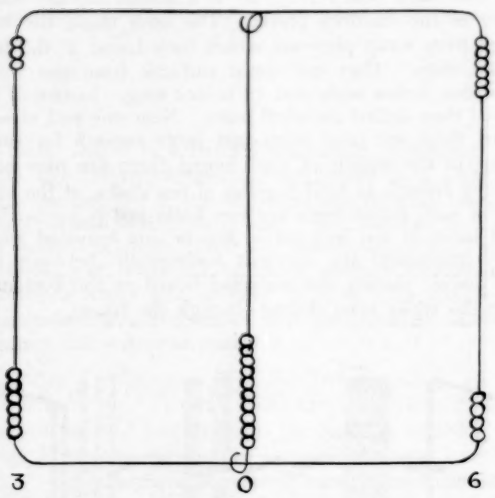

Fig. 4—Abacus

a number shown on the abacus is recorded on paper a zero must be used to hold the place whenever an empty wire serves that purpose on the abacus.

For those who want to work with larger numbers there is another device for showing place value (Fig. 5).

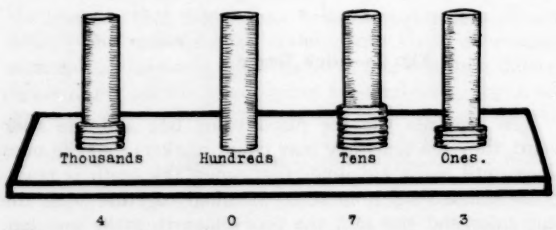

Fig. 5—Open End Abacus

Four upright wooden dowel pins fastened to a flat board represent from right to left, ones, tens, hundreds, and thousands. Metal washers slipped over the dowel pins represent the numbers, nine of them for each wooden pin. The reading and the writing of numbers in the thousands are made easy with this device as children extend their concept of counting to larger numbers.

Basic Number Facts

When children begin to put groups together in adding or multiplying, and to take a group apart in subtracting or dividing, the concrete materials in the arithmetic center help again. As pupils discover for themselves new number facts, they need real objects to help them visualize the putting together and the taking apart processes. When they can actually put six objects together with five objects and quickly arrange them to find out how many tens and how many more, the meaning of "6 and 5 are 11" becomes clear. Because the fundamental processes are primarily regrouping operations, actual materials to manipulate are important.

The felt or flannel board is a versatile helper. It is a piece of wallboard, two feet by three feet, tightly covered with outing flannel, felt, or an old blanket dyed some uniform color. Cut-outs of various kinds—more concrete ones such as rabbits, birds, trees, and less concrete ones such as circles and squares, as well as number symbols and signs—will adhere to the covered board if a small piece of sandpaper is fastened to the back of the cut-out. The cut-outs will cling to the flannel board where they are placed and are easily shifted in meaningful arrangements. How easy it is to show that nine and five make ten and four just by moving cut-outs on the board.

The tens block and the ones blocks (Fig. 6) play their part in developing basic number facts, too. Single blocks may be oblong or cube shaped; tens blocks are larger blocks grooved to give the impression that they are

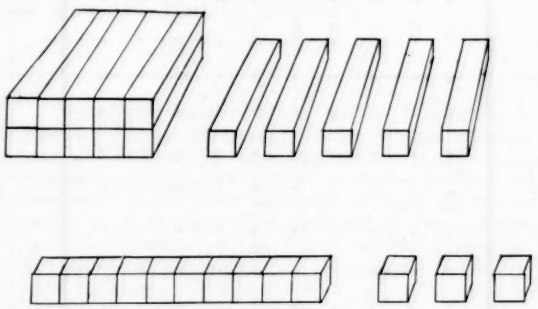

Fig. 6—Tens and Ones Blocks

ten of the small ones blocks. These blocks may be quickly cut from scrap lumber and are easily grooved. The tens block has the advantage of emphasizing that ten is the basic collection of our number system and that ten is a unit made up of ten ones. The tens and the ones blocks above show clearly that fifteen is one ten and five ones and that thirteen is one ten and three ones. These blocks are also useful in representing the regroupings of number which take place in the operations with whole numbers. Such regroupings to make a single group or a group of tens and ones can be visualized easily; a deft shifting of the blocks shows that five, seven, and four can be regrouped into a tens block and six ones.

The place value box and the stick board previously described help also to emphasize that operations with numbers are regrouping processes and to develop the idea of carrying in addition and of borrowing in subtraction. Regrouping is extended as collections of tens are moved into the tens place in addition or when a ten is broken up to make more ones from which to subtract in a situation that requires borrowing.

Fractions

Although Miss Guide's pupils do not work extensively with fractions, their interest has been encouraged by several other objects which appear from time to time in the arithmetic center. Miss Guide is interested in helping children understand that a fraction is part of a whole or of a group, that the numerator of the fraction tells the number of parts taken, and that the denominator tells the size of the part in terms of the whole object or group originally considered. Actual objects, like measuring cups and spoons, are part of the arithmetic table collection. The children measure real ingredients for their cooking projects and "play" ingredients like colored water or white sand when they are testing their knowledge of fractions.

There is a handy box of fraction cut-outs for the flannel board. When certain parts are fitted together, it is easy to see that four fourths are required to make a whole, or that a fourth from one whole leaves three fourths, or that two fourths equal one half.

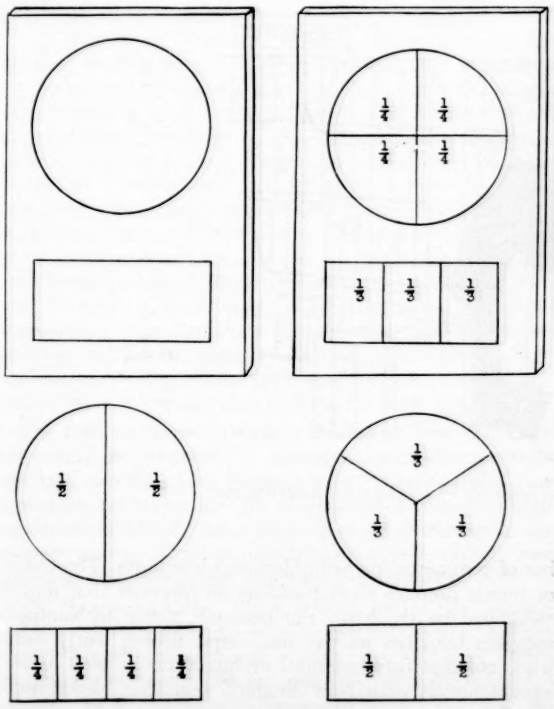

Fig. 7—Fraction Form Board

A great favorite is the fraction form board (Fig. 7) which is made from two pieces of wallboard or plywood, twelve by twenty inches. A large circle and a large square or oblong are cut from one piece, leaving a frame with two openings. This frame is fastened to the other piece of plywood which serves as backing for the form board. Fractional parts are then cut so that it is possible to fit into the openings a whole made of halves, a whole made of thirds, or a whole made of fourths. More advanced pupils may add other fractions that occur rather frequently in daily life. Fitting the fraction forms into the form board gives the touch and feel of the fractional part of the circle and of the fractional part of the square or oblong. Before long, pupils discover that the fraction with the larger denominator is in fact the smaller in size and that the number of equal pieces in the whole determines the size of each part.

Measurement

But there still are more things that may appear on the arithmetic table during the school year. These are the things that help make measuring more meaningful—rulers, tapelines, and yardsticks; cup, pint, quart, and gallon containers; peck and bushel measures; paper sacks filled with beans, each one weighing a different amount—an ounce, a pound, five pounds, or ten pounds; a heavy piece of cardboard marked *one square inch*, another *one square foot;* a clock, a thermometer, and an empty egg carton; a real scales for weighing real things—beans, shelled corn, or pebbles. What a lot of measuring goes on in this room!

Because numbers have meaning for these boys and girls, they are alert to the number situations all about them. They make the daily attendance report, keep the lunchroom records, collect money for various funds, manage the distribution of supplies, help plan the daily time schedule, go shopping for materials for various activities, and solve the number problems that are constantly arising in all their lessons. If they need help in visualizing a problem situation or verifying their answer in some concrete way, the resources of the arithmetic center are always available. They take special pride in them because they collected or made most of the items themselves, and, having used them often, they know how helpful they are.

Miss Driver and Miss Guide are both teachers of arithmetic. Miss Driver has problems which she feels are insurmountable and children who fear and dislike their study of numbers. Miss Guide works in quite a different atmosphere. Can the use of concrete materials make such a difference?

Miss Guide would answer, "When arithmetic is real and interest is high, number relationships almost take care of themselves. We use the things we already know to discover next steps, and before we know it we feel at ease in a new skill. We really haven't space in our crowded room for an arithmetic center, but we couldn't afford to do without it. We just let it spread out wherever it can. If arithmetic is to be real, there must be things that will make it so."

GIVE THEM A REASON FOR READING

Adapted from Warren English Project Bulletin No. 3, *Adjusting to Individual Differences in English: Uses of Reading*, Olive S. Niles, Director, Boston University High School and College Reading Clinic, and Margaret J. Early, Warren Research Fellow.

Best-seller lists indicate the ways in which adults use books to enrich their experiences. They read before traveling, before meeting people, before taking up a new sport or hobby. They read to improve their vocational or professional efficiency, to extend their knowledge of current affairs, to "win friends and influence people," to find "peace of mind" or to "look younger and live longer." They read to become better parents, wiser consumers, better gardners, better amateur photographers, more expert golfers. They find that reading increases the pleasure they can derive from all kinds of entertainment. They have learned that reading and "doing" complement each other; activities are enriched by correlated reading, and reading itself takes on new meanings from actual experiences.

children a reason for reading different from, and in addition to, the aesthetic appreciations which are the goal of the planned literature program may develop in them a respect for reading that will grow, rather than diminish, in adult life. What kinds of activities will make pupils feel that reading does have many uses? A few are suggested here:

1. *Before Taking a Trip.* Some teachers take advantage of the class trips that are end-of-the-season activities in many schools. A few weeks ahead of time they direct pupils to sources of information about the site they are to visit. Pupils may investigate the encyclopedias for general background, look into the ***Reader's Guide to Periodical Literature*** for leads to possible articles in *Holiday* and the *National Geographic*, and write to the cham-

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Many of these uses of reading may be introduced to the elementary and junior high school pupils. In doing so, we serve one important goal of the total reading program: helping children to realize the immediate usefulness of many kinds of reading. The use of reading for practical purposes may appeal strongly to pupils, particularly boys at the junior high level, who shy away from books as a form of recreation or aesthetic enjoyment. Giving these

ber of commerce for pamphlets and brochures. The teacher or pupils prepare short booklists on interests that may be awakened by the trip. For example, a trip to Nantucket suggests booklists on the sea, ships, fishing, early industries, colonial furniture and architecture, as well as adolescent novels with New England seafaring backgrounds.

In many junior high English classes field trips are planned to enrich literature. Why not reverse the process,

plan the trip first on the basis of pupil interests, and let reading enrich the trip? Visits to an automobile assembly plant, a radio or television studio, a shipyard, a food-processing plant, a farm, or to special exhibits prepared by department stores, manufacturers, and other groups suggest opportunities for purposeful reading. Such reading need not be exhaustive or "heavy." Much of it may be found in pamphlets published by manufacturing companies, in magazine articles and reference books, and in semi-technical books written for young readers. With interest awakened ahead of time, youngsters are prepared to ask pertinent questions, to relate new experiences to what they already know, and to appreciate more fully a process, a product, or an exhibit.

2. *Before an Assembly.* English teachers can do something about the long, embarrassing pauses that sometimes follow when an assembly speaker offers to answer questions from the audience. At the same time they can illustrate an excellent reason for reading: knowing something about an expert's field before meeting him. One teacher learned that next week's assembly program was to feature a group of foreign students from a near-by university. He read the list of speakers to his class: a student from Peru, one from India, another from Israeli, one from Norway, one from England. Here was a chance to acquire direct information through immediate personal contact. The class tried to draw up a list of possible questions they might ask the visitors; the list was short and the questions far too general to challenge the speakers. To ask intelligent questions, the pupils needed to know something about Peru, India, Israeli, Norway, and England. They turned to the reference books. Brief reports in encyclopedias were suggestive; soon the students had lists of questions to ask each guest. The pre-reading in this situation took very little time. After the assembly there was more reading on the part of individual students who had been stimulated by the speakers.

3. *Classroom Visitors.* Another illustration of the values of reading before meeting an interesting personality may be created by inviting guests to the classroom. These visitors may be invited to speak to the class, to take part in panel discussions, or simply to serve as a receptive audience for reports on a topic on which they, like the pupils, are "authorities." An average community offers dozens of interesting personalities who are well informed on subjects that interests children and who would be willing to visit the classrooms in one of the capacities suggested. The classroom visitor need not be a Very Important Person. He may be, for example, a Korean veteran, a foreign-born citizen, a craftsman, a traveler, anyone with an interesting hobby or specialty. Again, through reading, pupils become acquainted with the visitor's interests and prepare themselves to talk intelligently with him.

4. *Films.* A use of reading similar to those described above may be developed in connection with documentary films that can substitute for field trips. Similar techniques correlating reading with the activity are involved. Pupils can learn much of value from films if readiness is developed through well-directed, purposeful reading and discussion preceding the showing and following it.

5. *Current Affairs.* Short bibliographies that provide background for the news may be posted on the bulletin board. These bibliographies should refer to books within the range of student abilities and very often to magazine articles that have been clipped and mounted. For example, the present round-the-world-trip of Queen Elizabeth may stimulate reading from a list like the following *The Little Princesses*, Crawford (Harcourt, Brace, 1950); *Elizabeth Enters*, Johnston (Scribners, 1953); *Most Gracious Majesty*, Parker (Crowell); "Portrait," *Time*, Nov. 10, 1952; "World's Busiest Mother," *Saturday Evening Post*, Nov. 8, 1952. Some pupils may be persuaded to follow the royal itinerary, reading books and magazine articles about the countries visited. For slow readers, the thin picture books *Australia in Story and Pictures* and *New Zealand in Story and Pictures*, two of a series by Henry Marguerite (Chicago: Albert Whitman, 1946) are appropriate. The *Let's Read About* series (Fideler Company, Grand Rapids, Michigan) includes easy-to-read books on Australia (Harris), India (Raman), and Canada (Harris) that are appropriate to this topic.

Especially for her air-minded seventh-grade boys, one teacher posted on her bulletin board a newspaper clipping headlined: "Man's Fastest Flight Yet: Twice the Speed of Sound." To the clipping she attached the following reading list:

Young People's Book of Jet Propulsion by Frank Ross, Jr. (Lothrop, Lee and Shepard, 1950)

The First Book of Airplanes by Jeanne Bendick (Franklin Watts, Inc., 1952)

Flying Windmills, the Story of the Helicopter by Frank Ross, Jr. (Lothrop, Lee and Shepard, 1953)

Aviation from the Ground Up by John Floherty (Lippincott, 1950)

Your Trip into Space by Lynn Poole (Junior Literary Guild, 1953)

"Uncle Igor and the Chinese Top," *Time*, Nov. 16, 1953

"Eight-Mile-High Jump," by Vincent Mazza, *Popular Mechanics*, January, 1951.

6. *Hobbies.* A hobby show may display both what students have made or collected and the books and magazines that relate to their collection or craft. The encouragement of individual reading along hobby lines may go on throughout the wide reading program. Notes on the bulletin board to individual pupils help to maintain interest: "John, have you seen *The Junior Woodworker* by Carles K. Hayward (Lippincott)? It's a new book that's just been added to the school library."

Simply written, well-illustrated hobby books are innumerable. A few of the newer publications attractive to junior high school boys and girls are the following:

Photography for Boys and Girls by Stanley W. Bowler (Crowell)

The Boy Mechanic by the editors of *Popular Mechanics*, 1952 edition. (Simon and Schuster)

Creative Hobbies by Harry Zarchy (Knopf) and an older book by the same author, *Here's Your Hobby*

The All-Family Activities Books, a series published by Knopf, are thin books suitable for younger pupils and slow readers. Titles in the series include Leathercraft (Lewis), Woodworking (Lewis), Magic (Van Rensselaer), and Photography (Gottlief).

Fun for Young Collectors by Joseph Leeming (Lippincott)

Make It and Make It Pay by Catherine Roberts (Houghton Mifflin)

7. *Reading around Sports.* English teachers who don't know a Louisville slugger from a mashie can join their pupils in demonstrating this use of reading. Pupils may read and review books that will widen their teachers' acquaintance with sports. Popular units in the junior high center around the history of sports, or around one of the

baseball leagues, or sports in various countries, or seasonal sports, or sports personalities. An excellent unit on sports, "Signal Calls," is issued by the Division of Instruction of the Austin (Texas) Public Schools.

To show students that books can be substitute teachers in acquiring a new skill, pupils may read an instructional book on a sport that is new to them and then demonstrate to the class (so far as possible) the techniques or skills they have learned. As one indication of the availability of books on sports, A. S. Barnes (101 Fifth Avenue, New York 3) publishes books in fifty different sports fields.

8. *Reading Specialties.* The difference between individual reading specialties and reading as an outgrowth of interest in hobbies and sports is that the former type implies an almost wholly intellectual pursuit. Superior students may become interested in reading intensively about certain ideas or subjects. If these subjects relate to arithmetic, science, history, or art, teachers in these content areas may do a better job than the English teacher in guiding selection of books. However, the English teacher often provides the first stimulus for selecting a reading specialty and should, of course, be able to develop reading interests growing out of his own field. The following types of reading specialties are particularly pertinent in the English class:

—reading all the important works of one author (and he may be Armstrong Sperry or Howard Pease as well as Rudyard Kipling);

—reading special types of literature (short stories, plays, science fiction);

—reading all about one person or a group of persons;

—reading all about people in special fields;

—reading all one can find about some particular place or country;

—reading literature related to one period of history such as stories of the American Revolution,

Students who become "experts" in any field should be given many opportunities to share their special knowledge with other members of the class. They should also realize that being expert in only one area may make them complete neophytes in every other field.

9. *Reading before Buying.* This use of reading may be demonstrated in other classes better than in English classes, but if the classroom library is well stocked with "useful" books (handyman's guides, books on gardening, cooking, dressmaking, carpentry, photography, etc.) and with magazines, manufacturers' pamphlets, and catalogs from mail order houses, students may spend some time in the free-reading or "browsing" periods acquiring information about articles they or their families intend to buy. Catalogs, shoppers' guides, advertisements, and labels are useful materials for skills instruction, too, and from the use of such materials attitudes of careful reading-before-buying may be developed.

10. *Reading for Others.* Older girls may be invited to read and evaluate children's literature in order to increase their stock-in-trade as baby-sitters. Given this purpose, slow learners may be led to read easy children's books that they might otherwise scorn as too childish. Arranging for groups or individuals to read to children in kindergarten and primary grades or at a library story hour is another way of making this type of reading immediately useful. The long-range goal of acquainting future mothers with some of the delightful picture-and-story books published for children is another worthwhile objective.

Other motivational devices based on reading for others include the preparation of summer or Christmas booklists, planning book programs, and making recommendations for the purchase of books for the classroom or school library. In preparing booklists, the class may agree that no book is to be recommended unless a certain number of pupils have read and approved it. A special book program planned for the spring can be the objective toward which the class reads for several months. A program of this kind is enlivened by exhibits of projects, dramatizations of scenes from books, and displays of new books, each with a card attached on which some pupil has written a worthwhile comment. A "Bazaar Kit" including a handbook, sample book jackets, radio script, and streamer may be purchased from Division Book Bazaar, *Scholastic Teacher,* 351 Fourth Avenue, New York 10.

11. *Mass Media.* In some classes rotating committees keep their classmates informed of what outstanding programs are to be presented on television or radio, what good movies are coming, what is "current and choice" in the popular magazines. These committees read the radio and television digests, the week's programs in the Sunday papers, reviews of programs, movies, and books, and scan the magazines for articles related to ongoing class projects and for short stories that may appeal to their classmates. They are particularly interested in noting new movies and television programs based on books and in suggesting that their classmates read these books before or after seeing the film or telecast.

12. *Reading around Careers.* Teachers have long used units on careers both to stimulate reading and to provide vocational orientation. In the year before high schools, pupils are ready to read widely in the many career books published every year for this age group. In addition to fictionalized treatments of various occupations, many publishers offer easy semi-technical books in fields like television, electronics, aviation, transportation, engineering, agriculture, and chemistry.

13. *Reading for Personal Development.* Adolescents' concern with their personal appearance and their desire for popularity provide strong motivation for reading for personal development. Boys and girls in their early teens want to know how to make friends, how to get ahead in school, what to wear, how to behave in social situations, how to get along with their family. Pupil bibliographies for units built around these problems may include books like *Your Manners Are Showing,* Betz (Crosset, 1946); *Smarter and Smoother,* Daly (Dodd, Mead); *How to Be Happy Though Young,* Lawton (Vanguard, 1949); *Ways to Improve Your Personality,* Bailard and Strang (Whittlesey, 1951); *Tips to Teens,* Williams (Waverly, 1948); and pamphlets like these from the *Life Adjustment* series (Science Research Associates, Chicago): "Getting Along with Brothers and Sisters," "How to Live with Parents," and "What Are Your Problems?" As a result of this reading, pupils may prepare a class notebook on etiquette, socio-dramas, bulletin board displays, panels and quiz programs.

(Continued on page 119)

ENRICHING OUR CURRICULUM WITH PICTURES

Irwin Price

One of the goals of the social studies program for 7th grade in our school is: "To help the students improve their ability to read, take notes and organize information." Recently, we found that pictures can help greatly to achieve this goal, especially in a school where there are many Puerto-Rican American students whose English vocabulary is limited.

One day a student brought to class a copy of *Life Magazine*, containing an article that related to our unit of work. She was asked to report on the article, and she merely held up the magazine while trying to read the captions. Untouched was the wealth of information that lay in the pictures (taken with great care for detail), and in the accompanying text. An informal discussion with the class led to the conclusion that students – and adults, too – need to take time to read pictures and get the most out of them. We decided to plan a picture-reporting unit. in which pictures were our chief source of information.

Irwin Price, with degrees in Education, has taught Social Studies in J. H. S. 188 in New York City for seven years. A veteran, and father of two little daughters, he finds enjoyment in reading extensively in the fields of history and geography.

PICTURE-REPORTING UNIT

The unit was to be part of our social studies topic, *New York City: Food Distribution Center.* A series of documentary photographs available in our school[1] served as the basis for the unit. We had already spent three weeks on the topic, and from our readings and class discussions we had arrived at these generalizations: a) that food is necessary for survival; b) that all food is directly or indirectly derived from the green plant; and c) that the farm population, 1/5 of the whole population, had to feed our entire nation and other nations as well.

We were now ready to find out how our local to community, the lower East Side of Manhattan in New York City, received and distributed the goods grown elsewhere. The class of 35 students was divided into 5 groups, each to examine the pictures and texts dealing with one type of food, such as Fruits, Vegetables, Dairy Products, Meat, Fish. We devoted 4 sessions to this study, as follows: first period, a basic lesson on how to read pictures; second period, examination and study of pictures by the committees; third and fourth periods, presentation of reports and evaluation.

1. Picture-Reading Skills

Each group was given one picture to examine. The students were asked to write down what they could understand from the picture without consulting the text, i.e., what facts they could see in the scene, and what they could imagine from what they saw and from their own experience.

As illustration, a scene in a cafeteria brought out the following information. (See Figure 1.)

The Facts Seen

The food is neatly arranged.
The workers are dressed in clean uniforms.
The floor is marble and clean.

[1] Visualized Curriculum Series, published by Creative Educational Society, Mankato, Minn.

The glass in front of the food is so clean it almost looks like no glass.

The trays and silverware are piled neatly.

This cafeteria has new, modern equipment.

Inferences

It is nearly lunch time, everything is ready for the rush.

The desserts, in front, are probably in a refrigerated case; the hot foods, at the back, are on steam tables.

The customers first pick up trays and silverware, then take the cold foods, and the hot foods are served last.

A modern cafeteria is easy to keep clean.

They need more workers than we see to serve the food when the crowd starts to come in. Maybe they arrive later.

The door at the back leads to the kitchen. That is where all the cooking and dish washing are done.

This lesson emphasized the difference between stating what is seen, and drawing inferences. Many of the students were familiar with conditions of work in a cafeteria and were able to supply the missing information.

2. Committee Work

When the class arrived for the second period, there were on each of the 5 tables, a group of 15-20 pictures on their subject, and a typewritten "work schedule," which read as follows:

WORK SCHEDULE

a) Divide the group of pictures on your table, allowing time for *each* student to examine *all pictures*. Put aside the pictures that are not pertinent.

b) Have a group discussion about the pictures and texts on the back. Choose a secretary to write down your group's ideas.

c) Make an outline for a report to the class.

d) Choose about 3 pictures that will be used for your report. Select one person as commentator, one as assistant to display the pictures. Try to keep your audience interested, and present worthwhile information.

The teacher sat in with the groups as they worked. There was a great deal of interest in the project, and much spirit when they had to limit the pictures to be used in the report. It was my purpose in limiting them to 3 pictures, to give them practice in selecting pictures for a particular need. It was this aspect of the committee report that led to the greatest discussion.

3. Illustrated Reports

The students revealed much resourcefulness in the presentation and contents of their reports. For display, a large drawing easel was placed at the front of the classroom, and across the middle of it a strip of molding had been nailed. At a signal from the narrator, an assistant would place the illustration on the easel.

SUMMARY OF REPORT ON FRUITS

We found that the fruits we eat come from all sections of the United States, and are grown all year. See Figure 2, "Picking Oranges in California."

What kind of climate is necessary for growing oranges?

Where else do oranges come from?

Why is it possible to buy oranges all year 'round?

A large supply of fruits is canned or frozen, and then it can be used over a long period of time. A picture, "Testing Canned Peaches," was shown and discussed.

Why are these men inspecting the fruits?

How can we tell the quality of the peaches when we buy in cans?

How do we know if the peaches are safe to eat?

Fresh fruits are shipped as quickly as possible. A picture, "Truck Farmer Brings Fruit to City Market," illustrated how quickly fruit moves from the farm to the city markets. Every day at wholesale fruit markets, like the Washington Market, dealers come to bid for shipments. Some of the dealers are jobbers who sell to small stores, and some are buying for a chain of stores.

What fruits are coming into the city now from nearby farms?

How do we get fresh fruits in winter?

SUMMARY OF REPORT ON DAIRYING

Milk is an essential food and is most often used fresh. See Figure 3, "Calf-Feeding from Cow." All mammals produce milk in the body of the mother animal as food for

the new-born baby. This is the only food for the young mammals until they grow older.

The human baby also feeds on milk, and adds other foods as it grows older. Most of our milk comes from cows.

The milk we drink comes from farms about 100 miles or less from the city. It is shipped in refrigerated trucks to bottling plants like this one. By the time the milk is ready to be bottled, it has been pasteurized and, probably homogenized.

Cheese is another product we get from milk. A picture, "How Cheese is Made," showed that cottage cheese is made from sour milk. After the milk has curdled, it is heated slightly, and the whey (water) is drained off. The solid part is the curd, the part we eat as cheese.

Some of our cheese is made in processing plants in the city, and large quantities are shipped from Wisconsin and European countries.

OUTCOMES FROM THE UNIT

1. The students gained a great deal of information in social studies from improved ability to read pictures.
2. They became more observant of activities in their own environment. (We arranged to visit Washington Market, a wholesale produce depot; and Essex Street Market, a retail food market built and supervised by the city. Individual students and small groups reported on trips they had taken to warehouses, railroad sidings, and the Fulton Fish Market.)
3. They gained in their ability to report what they saw, and to distinguish between their own influences and what they had seen.
4. Students of limited langauge ability showed keen interest in the unit, and gained confidence in expressing themselves to the class.
5. There was a continuing interest in collecting and filing pictures, to supplement the file we already had.
6. There was a keen interest on the part of non-readers, in learning to read the captions and text of pictures. (This has particular value in a social-studies and language arts core program.)
7. Pictures are now an integral part of our reference materials, side by side with encyclopedias, books, maps, films and other aids. They have given the non-reading student an opportunity to find new avenues of interest and knowledge at a pace dictated by the individual.

THE ORIENTATION OF ONE LONELY NEWCOMER

Douglass Brown
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Mary Lou Kuhn
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What is orientation? Orientation may be considered as the process of helping a newcomer of any age, to any institution or organization, to gain a feeling of belonging and of helping the newcomer to function with optimum effectiveness as a member of that organization at the earliest possible date. Untold man hours have been wasted or partially wasted because of insufficient attention on the part of supervisory personnel and executives to the process of orientation of new members of their organizations. Countless newcomers, especially those who have come singly, have suffered some, or tremendous mental anguish (depending upon their temperament) over a period of weeks or months while they struggled to orient themselves without the aid of those who should and could have helped so much.

This discussion will be limited to a consideration of problems of orientation in elementary schools. Even with this limitation, there are four possible major problems which might be discussed. These are orientation of new teachers at the opening of the school year, orientation of substitute teachers as they may appear at any time during the school year, orientation of whole groups who enter a new school, especially as kindergarten or first grade pupils, and orientation of individual pupils who may enter at various times throughout the school year because of their family's change of residence.

While we believe all four of these problems merit most careful consideration, we choose here to treat especially of the lone, and usually very lonely, newcomer who enters at any time other than the opening of the school year. Such a newcomer's plight is particularly pitiable because all the others are already more or less well adjusted to the situation and because there is a strong probability that the lone newcomer has been similarly enrolled in a new school one or several times before, with unhappy results and has, therefore, built up a dread and fear of one more new school. We suspect that the average teacher gives insufficient attention to the problems of this lonely newcomer for these two reasons: (1) failure to realize the desperate need of the pupil under these circumstances and (2) lack of time to devote to one individual among thirty-five or more in the same classroom group.

Moving to a New School

One third grade boy whom we know transferred to a new school in October, after having attended the previous school for two years and six weeks. The new school was less than forty miles geographically from the previous school but socially and educationally it was

hundreds of miles away. The principal of the new school was indifferent and unaware of the new boy's enrollment in his school. The teacher, a woman of moderate ability and mediocre training, was not at all antagonistic to the new pupil but she was, and remained, completely unaware of the boy's social and educational problems in adjusting to the new school. She considered it her duty to teach her pupils as a group to read, write and master the intricacies of arithmetic; she was not at all concerned with the social development of the boys and girls assigned to her as they lived on the playground and in the classroom. She was not aware of the cruelties visited by some of the boys, who already had social status, upon the new boy (and no cruelty exceeds that of one child to another under certain circumstances!). This boy, daily for several weeks, came home and before going to sleep cried and said "I don't want to ever go back to that school again, I want to go back to ——— school!" The mental anguish suffered by the boy was indeed great but added to this was the fact that since he was behind in arithmetic (not because of his ability but because of the difference in educational philosophy in the two schools), he was unable to develop sufficient confidence in himself, even with the aid of his parents, to achieve normally in arithmetic until he had been in the new school more than three years. It took him three and a half years to attain to a normal level of achievement in arithmetic in the school!

Fortunately, the boy was a reader of superior ability when transferred; had he not been, probably he never would have become adequately oriented to the new school.

Quite obviously the example above is only one of countless which could be given of the deplorable effects of failure on the part of the receiving school to give detailed attention to the orientation of the lone transfer pupil. We proceed now to describe the typical orientation actually provided for a new, lonely fourth grader in one elementary school.

Meeting the Principal

When the new pupil enters, for a very few minutes at least, he really has priority with the principal who receives him with such warmth that the pupil feels "This is a nice school where they act like they really want new pupils to come and the principal makes you think you are a fellow who amounts to something." Since the new pupil comes to the principal *first* it is of fundamental importance that the principal exhibit sincere, even though brief, cordiality. Of course, in the school where the pupil spends all or the major portion of the day with one teacher the chief responsibility for orientation must rest with that teacher rather than with the principal.

When the principal's messenger, who is carefully chosen on the basis of both friendliness and dependability, brings the new pupil to the teacher, she drops everything else for several minutes and devotes her undivided attention to the new pupil who is greeted with a pleasant and welcoming smile and voice rather than a "Ye Gods, what will I do with another one" attitude. The teacher puts aside what she has been doing in order to welcome the new child, just as the ideal hostess would welcome an unexpected guest in her home. Even though the messenger has made the introduction, the teacher repeats both her name and that of the new student, making certain she has the correct pronunciations of all names, and asks if the child is called by his full name or a shortened form. This will make the new pupil feel more at ease than if he is called by a name that is somewhat strange to him.

If the parent has accompanied the child, as is very frequently the case, the teacher checks on whether the child will be going home for lunch or bringing his lunch—for there is no hot lunch program in the building. The parent is informed of the exact dismissal times so that the child can be anticipated at home. The method of book rental is explained to the parent, and a list of the needed supplies given. The teacher suggests and makes definite appointment for a conference with the parent within the week in order to orient the parent with regard to the regulations and offerings of the school and in order to learn more about the pupil. Also one of the three room mothers is notified and she contacts the new mother within three or four days, to give her some orientation both to the school and the neighborhood.

The First Day

The child is then left by the parent and is shown where he can put his coat. As he is brought back into the room, he is assigned a place to sit and is introduced to any child who may be in the room at that time. The child is given paper and pencil to last for the day so that he will not feel "left out." The text books needed are given to him and the teacher finds out if he has used any of them in his previous school. If he has, he will be delighted to meet an "old friend" in one of the books.

By this time the other students will be coming into the room and all staring at the "new" student. The most poised may introduce themselves. During the second week of the year the teacher has already used some twenty minutes to talk with her class concerning the reception and treatment of possible transfer pupils during the year. This time has proven to be of inestimable value to the new pupils when they enter. After all are settled the teacher introduces the newcomer to the class. Also the new student is told he isn't expected to remember everyone's name at once—he must simply ask if he can't remember. Next the teacher selects one of the same sex who will be the "special" guide for the new pupil. Of the many volunteers, the teacher chooses one she thinks will "fit in" with the new student. It then becomes the responsibility of the special guide to show the new student where the rest room facilities are, give him a tour of the building at a recess period, and introduce him to the gym teacher the day of that class. This special guide also makes certain the newcomer is introduced individually, to the other members of the class and *especially* he sees that the new pupil is included in a play-group at recess. The teacher checks unobtrusively to make sure that the guide really functions. (Can there be a more horrible sensation than standing alone on a playground at recess?)

Not Too Much Attention

During classes for the first two or three days if the new pupil volunteers to take part in a discussion he most certainly is recognized, but otherwise the teacher waits a few days until he has become adjusted to his surroundings, for he would be most embarrassed if he could not participate after being called on. When written assignments are done during class time, the teacher shows the pupil the accepted form of preparing the paper, so that his won't be "different." At dismissal time, a "walking buddy," who lives near the new pupil, will be asked to volunteer. This "buddy" walks with him morning, noon, and evening for a few days.

The second day the teacher arranges a conference with the new student, in which she explains the rules and traditions of the school—safety, playground, building, etc. The third day she tells him about the study requirements, method of grading, and about special activities in which he could take part—scouts, religious education, tonette class, Junior Drama Club, and Junior Red Cross for himself, and P.T.A. and Booster Club for his parents. In the "just talking" part of the conference, the teacher asks about what the student enjoys doing after school and on Saturdays and, perhaps, suggests groups she knows of that enjoy the same things. She also inquires about his pets, things he liked at the other school, his friends there, and his newly acquired friends. Then she gives the student an opportunity to ask questions.

Talking with Parents

In the conference with the parent, the teacher explains the policies of the school and, again, the activities for both pupil and parent. Here the teacher finds out some of the home conditions, rather than asking the child, for some children tend to be quite embarrassed over some situation at home. The parent is given an enthusiastic invitation to visit the class at any time and is urged to come for conference or to phone any day.

The "special" guide and "walking buddy" function for a week. By this time the student has usually acclimated himself to his surroundings and his principal orientation problem is now his academic work. If the newcomer seems to be "behind" the other students in his work, the teacher gives him as much individual instruction as possible during the first three weeks so that he won't be the different one for too long. In some cases the help of other pupils in this individual instruction is judiciously used. Another conference is held with the student during his third week to go over problems and answer questions.

The procedure outlined above does not necessarily require a great deal of the teacher's time. The time consumed in orientation will vary with individual students. But with all newcomers, both the average and the exceptional, *minutes* spent in *orientation* during the first days and weeks may save the spending of *hours* in *correcting maladjustments* during later weeks and months. And the benefit to the immortal child is too great to measure.

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A CLINICIAN'S VIEW OF READING READINESS

William Eller

Not long ago, in an attack on so-called "progressive education," a West Coast newspaper editorially condemned reading readiness programs on the grounds that they "pamper" children by delaying reading instruction until each child has developed the necessary maturities. The editorial writer advanced the view that since children will have to compete in the hard, cruel world after they leave school, it is unrealistic for the elementary school to "coddle" them with a reading readiness program.

The readiness concept has been basic to educational theory for such a long time, and has been so thoroughly rationalized through millions of printed and spoken words, that it seems doubtful that elementary teachers would be deluded by such editorial reasoning. There appears to be, however, a tendency for a few first grade teachers to cut short the readiness period, either because they feel the necessity to "cover" a certain number of books during the year, or because they are unable to resist the pressure of those few parents who think that actual book-reading should begin very early in the fall term as it did "when I was in the first grade." The unfortunate results of this curtailment of the readiness program are obvious to the clinican who employs diagnostic measures with a large number of disability cases each year.

William Eller, who has written several articles in the Yearbooks of the Southwest Reading Conference, is Director of the Reading Clinic, at the University of Oklahoma where he is also Associate Professor of Education. He held a similar position previously at the Eastern Illinois State College, Charleston, Ill. Record collecting and high fidelity "tinkering" are among his recreational pursuits.

Most of the arguments presented in support of specific readiness work have been logical attempts to provide a rationale; the diagnostician, on the other hand, observes the results of the readiness program after it has succeeded or failed and thus has a more empirical point of view. The observations which follow are based on individual diagnoses of several hundred retarded readers, plus a few intensive studies of all disabled readers in entire school systems.

When a child is brought to the University of Oklahoma Reading Laboratory for diagnosis, his teacher and parents are asked to indicate the grade level at which the child first enountered difficulty in reading. For about eight-five per cent of these children, no matter how old they were at the time of diagnosis, the case histories show that reading disability began in the first grade. Of course, this does not by any means suggest that eighty-five per cent of the children who are retarded in reading lacked readiness when they were first instructed, since there are a multitude of other posible causes for reading failure in first grade. On the other hand, there are doubtless some few additional cases whose reading difficulty actually began in first grade. even though it wasn't detected until later. The most convincing evidence that many of these children didn't succeed in first grade because of lack of readiness is provided by the diagnostic examinations which reveal that at the time of testing some children were still not in possession of certain essential maturities.

Nearly all authors of basal reading series and methodology texts agree that certain instructional tasks are required in the readiness program—training in auditory and visual discrimination, orientation in the left-to-right concept, training in listening with comprehension, and development of a desire to learn to read. While there are other maturities which must be assured, the following are reading difficulties which frequently arise when one of these instructional tasks is slighted.

Auditory and Visual Discrimination

Durrell and Sullivan[1] have found lack of auditory discrimination the most frequently occurrent among several causes of reading disability. This is not particularly surprising, since the need for auditory discrimination is not so obvious to the unsophisticated teacher as the need for visual discrimination. Just a little thought, however, will make one aware of the importance of auditory discrimination to phonics teaching. In an indirect way, lack of auditory discrimination training is often involved in an inability to synthesize individual letter sounds into whole words, because the teacher who does not strive for discrimination is often the one who teaches the letter sounds in isolation and such teaching interferes with synthesis.

The diagnostician traces several of the common reading difficulties to insufficient ability in visual discrimination. Symptoms which are indicative, at least in part, of this lack are limited sight vocabulary, errors on "easier" words, failure to note differences between variants of the same basic

1. Durrell and Sullivan, *Building Word Power.* World Book Company: New York: 1945. p. 1.

word, even some apparent reversals. Of these, the most common complaint is that of the teacher who states that a certain pupil when confronted with the word "that" is likely to call it "what," "this," or something else. Because these words are short, the teacher assumes that they are easy, and doesn't understand why the pupil has trouble with them. Actually, it is the shortness of such words, in addition to their abstractness, which makes them so difficult to learn. The amount of visual discrimination needed to distinguish "that" from "what" is much greater than that needed to tell "elephant" from "airplane," since the shorter words have fewer identifying characteristics. Anyone who would say at this point that "elephant" doesn't look much like "airplane" would be admitting that visual discrimination is more important to the learning of the so-called "easier" words. Further, since so many of these troublesome words are pronouns, prepositions, and conjunctions, the child cannot associate any specific object or action with them, and is thus deprived of a type of clue that helps in the recognition of nouns and verbs. If the reader does not receive much help from associational clues, the ability to employ vicual discrimination in the recognition of these short words is even more crucial.

A similar characteristic common to retarded readers who have not had sufficient training in visual discrimination is the failure to detect differences between variant forms of the same basic words. Many of the sub-standard readers in third and fourth grades experience confusions beween such words as "jumps" and "jumped," and other words which have common derivations.

Even some of the more frequent reversals stem from inadequate visual discrimination. Many teachers would insist that when a third grade pupil reads "was" for "saw," his problem is one of left-to-right orientation. While this might be an acceptable explanation for reversal by a youngster in first grade, it is not reasonable to suppose that a third grade child who reads from left to right more than ninety-nine per cent of the time would reverse his direction only on those few words.

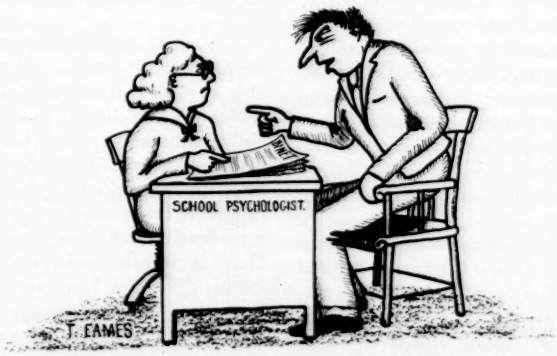
Listening for Comprehension

When a child does not have enough training in listening during his readiness period, his foundation for comprehension skills in silent reading may prove inadequate in later years. Because he did not learn the basic elements of the stories read aloud to him in first grade, he doesn't know what to look for when reading silently in third grade. During the diagnostic testing period, the reading clinician observes that such a pupil manifests an incomplete or badly organized recall of the context of passages in the tests. Sometimes word-by-word reading is partially caused by this same lack of of listening training in first grade, although other causes seem to be more frequent and serious.

The clinical test administrator does not observe much of the damage done when the left-to-right orientation has not been adequately developed during the readiness period. Occasionally the clinician works with a child who demonstrates some disorganization in his progression from left-to-right and from top-to-bottom on the page. However, most of the common reversal errors involve short words, and are attributable to lack of visual discrimination training more than to any lack of understanding of the left-to-right direction.

If the desire to learn to read has not been fostered in a child who later becomes classified as a reading disability case, this, too, is difficult for the diagnostician to appraise. By the time a child is classified as a problem case, he has been embarrassed for some time by his attempts at reading, and usually has an unfavorable mental set toward the reading process, so it is not easy for the tester to know if the child ever had a desire to learn to read. The admission that insufficient development of the left-to-right concept and the desire to read are not so easily traced when they are causes of poor reading skill is, of course, no excuse for minimizing these portions of the total readiness program.

This diagnostic view of part of the readiness training, especially auditory and visual discrimination and comprehensive listening, has pointed out some of the undesirable characteristics which may be produced in the reading patterns of elementary children when the readiness period, or a part of it, is slighted. It is hoped that teachers who have always appreciated the significance of the readiness principle may find this list of hazards useful in educating parents to the importance of the reading readiness program.



Don't be silly. That child's just as bright as I am!

DISCIPLINE WITHOUT DISRUPTION

Delwyn G. Schubert
Los Angeles State College of Arts and Sciences
Los Angeles, Calif.

One of the most perplexing problems facing many teachers in our schools today—particularly beginning teachers—is that of maintaining control in the classroom. Teachers complain over and over again that they are forced to do more policing than teaching. The majority of teachers could remedy the situation by becoming familiar with the following basic principles.

1. *Convince the majority of the students that your classroom is a fascinating and exciting place where interesting things happen.*

"But this is nothing more than good teaching," you are thinking. Right! And there is absolutely nothing more basic to classroom discipline. Here is how it works. One of a child's most fundamental needs is that of maintaining status in his group. If you have established rapport with the majority of the children and they feel that what you have to offer is vital and interesting, the individual child who causes a disturbance will be held in check by the group. The boy or girl who begins talking loudly to a neighbor while you are trying to command the attention of the class will be greeted with, "Aw, pipe down" or "Shut up, will ya?" Since these remarks come from the group to which he wishes "to belong," the pupil will stop the disturbance immediately. Should it happen, however, that the class as a whole is not on your side, then be wary. Any misdemeanor will receive group sanction with the miscreant gaining status among his peers rather than losing it. Don't let this happen in your classroom.

2. *Win over classroom leaders.* In any classroom there are several socially dominant children whom other pupils look to for leadership. These children can be spotted through careful observation or by simple socio-metric charts. As soon as it is discovered who these leaders are, it is important to win them over. Hold individual conferences with these children. Let them feel that you understand them—their wishes, interests, and problems. Remember that if they dislike you and what you are doing, many others in the classroom will be inclined to react also with dislike.

3. *Get to know the children by name as soon as possible.*

To help assure control at the beginning of a new school year it is necessary that you learn the names of your pupils as quickly as possible. Use a seating chart or any method you find helpful. But learn their names. Nothing promotes confusion and disorder more effectively than anonymity. The teacher is inviting trouble when she is forced to say such things as "No, I don't mean you. I mean you—you with your hair combed back." Not only is she providing amusement; she is announcing openly that reprimand for misdeeds will be shared by the whole class rather than absorbed by the individual.

4. *Build a repertoire of unobstrusive classroom methods to take care of those children who do not respond properly.*

Using a child's name in the course of your presentation is a useful technique in dealing with an inattentive student. Saying for example, "Yesterday, you remember, Margaret told us that. . . ." is sufficient to curb Margaret's inattention. Frequently, a teacher finds that a question helps. "Margaret, how do you feel about this?" Often, too, a teacher can curb a disturbance by staring at the offenders. When necessary, stop what you are doing. Quietness will draw children's attention quickly. There are times when you ask a child to see you after class. If you feel that he will try to avoid seeing you at that time, be near the door when the period is at an end. Then, as if by surprise, you say to the student, "Oh, yes. You were going to stop and see me, weren't you?" And that's it! All it takes is a little unobtrusive ingenuity.

With a background of high school teaching prior to World War II, then over three years of service which took him through much of Europe during the War, Dr. Delwyn G. Schubert is now Assistant Professor of Education at Los Angeles State College of Applied Arts and Sciences, and Director of the Reading Clinic. At home he enjoys playing the violin, and the antics of his two tiny daughters.

5. *Deal individually with serious offenders and look for underlying causes.* If a child is defiant or unmanageable in class you will accomplish more by seeing him alone without an audience present. When you deal with the child individually, allow him to express his hostilities, voice his grievances, and in general, "blow off steam." Be interested in him and be genuinely understanding. Try your utmost to learn why he did what he did. If necessary, have a conference with the parents either at home or at school. Don't be satisfied until you have uncovered the basic causes for his difficulty. Nothing worthwhile can be accomplished if you treat only symptoms. If the case seems beyond your ability to handle, consult a specialist for advice.

6. *Use praise as well as reproof.* Thorndike has shown that individuals learn more quickly when an experimenter announces "right" for correct responses than when he says

"wrong" for incorrect ones. The obvious educational implication is that a teacher can expect praise to be more effective in most situations than reproof. So put more emphasis on getting your students to do what is right by using praise than on punishing them to keep them from doing what is wrong. Whenever possible, let positive discipline prevail over negative discipline.

7. *Rarely send a child to the principal's office.* A teacher never should indicate to the class in any way that she has exhausted her repertoire of punishments or rewards. When you send a child to the principal's office you've used all your artillery. There is no more! It's your last bullet. It should be done only when you are confident that the problem presented is out of your control and needs the attention of someone more expert in those matters. Bear in mind that resorting to this procedure is an admission to the class, the principal, and yourself that you are licked.

The foregoing principles are basic to classroom discipline. Others, of course, could be added. But from the suggestions made, it is evident that good classroom discipline concerns itself with the welfare of the child. No disciplinary measure should be taken that will crush a child's spirit or initiative. It is important in this regard that children know what they may and may not do. Teachers must be consistent. Vascillation and inconsistency in disciplinary procedures will lead to confusion, emotional strain, resentment, and the desire to oppose authority.

Discovering Her Secret

It is only natural for a retired educator to begin to reminisce about the high points in his career, especially when he is gathered with others of his kind at state conventions. Listening in on these conversations, one is inclined to feel that many of these old timers had an idea or two that might well be applied in the present generation.

On one of these occasions, I recall hearing Mr. G. C. Maurer, retired superintendent of Wooster (Ohio) tell a story that seems almost unreal in this era of self-centered individualism. The subject was Miss Grace Eddy, fourth grade teacher, now also retired.

"She was a fine teacher," remarked the stately, white-haired superintendent. "But I noticed something about her that lifted her to an even higher class. She was exerting an unusual influence over her pupils, and it was being felt in the community too. Although not a stern disciplinarian, she received more than her share of respect and attention from the youngsters. Truancy was unknown and lessons were well learned. Politeness was habitual not only to me, but to all visitors and school personnel.

"I was curious to learn the reason for her success," Mr. Maurer went on, "and made repeated visits to her room, hoping that I would catch the secret. But I could point to nothing that was out of the ordinary.

"Finally, one day I set out for her school determined to ask her what method she used. It was late afternoon, and I arrived there just prior to dismissal time. The scene was one that you would expect to find in any average classroom. Then, just before the final bell sounded, Miss Eddy quietly laid her pencil on the desk, folded her hands, and spoke.

" 'All right, children.' "

A tear came to the old superintendent's eye as he continued.

"When she spoke, the entire class bowed their heads as if one and began to pray. I remember very well every word of that prayer.

" 'Dear Father, help us to be better boys and girls;
Teach us to be kind to strangers on the street
And to love our fathers and mothers each day.
Amen.'

"I left the school that day," he concluded, "without ever asking Miss Eddy what her secret for successful teaching was. I didn't have to, for it was revealed before my very eyes. She had called upon and was using a power far beyond her own realm to make her classroom a vital place of learning experience." — Ward W. Konkle, Wooster, Ohio

PARLIAMENTARY PROCEDURES IN THE CLASSROOM

A means of fostering and developing student responsibility and greater awareness of democratic procedures was tried successfully with students in the Elmhurst, Illinois Junior High School. The following provides a brief sketch of the procedure employed.

9:00 A. M.

"Will the meeting please come to order. Will the secretary please read the minutes of the last meeting. Are there any corrections or additions?"

And thus the session began; and each successive session was carried on in a similar nature.

Each week the class elected a president; a vice president and a secretary. Every student had the opportunity to be secretary at least once during the school year and no one individual was ever selected to hold any post more than once.

At the inception of the class period, the president called the class to order. The vice president presided during the absence of the president. The secretary's minutes consisted of a brief review of the preceding day's work in class. The reading of the minutes being concluded, the president presented the class to the teacher who acted as chairman for the remainder of the class period.

This procedure supplemented the social growth of the individuals in several respects. First of all, the class meetings were begun without the loss of any time. Secondly, it provided each student with the experience of appearing and talking before the class in a new setting. Then, too, the students were more closely associated with the entire class. They all belonged to this "we" group. As a result of the review, each student placed himself in a receptive frame of reference for the classroom instruction which was to follow.

Parliamentary procedures in the classroom implant in boys and girls the fundamentals for group interactions which are consequently the basis for our democratic "modus operandi." (Prof. Walter F. Johnson, Dept. Guidance and Counselor Training, Michigan State College, E. Lansing, Mich.)

EXPERIENCES WHICH CONTRIBUTE TO THE SOCIAL AIM OF INSTRUCTION IN ARITHMETIC

Mildred Stone

Salem State Teachers College; Salem, Mass.

No one questions the need for (1) accurate computation based upon adequate understanding of the mathematical structure of our number system and the principles underlying its use and (2) effective solving of verbal problems. However, these understandings and skills will not alone guarantee economic competence or consumer efficiency.

Most of the computation needed by consumers in making a purchase has been done in the pricing of goods or will be done by the adding machine. Verbal problems are rarely present. But there is an almost constant need for making mathematical judgments. The preparation of children for consumer efficiency requires that they have opportunities for judging, estimating and making decisions —opportunities which normally occur in social situations. A balanced instructional program does not require a choice between the mathematical and the social aspects of arithmetic but comprises both.

Consumer Arithmetic

Let us examine some adult situations for verification of the need for quantitative judgment in consumer situations. The practice of packaging meat so as to display the price per pound, the number of pounds and ounces, and the cost of the piece removes the need for computation. The real problems which still may exist are: Does the food budget allow for steak? Does the family enjoy steak enough better than hamburg to warrant the extra cost? What kind of steak can be afforded? What amount must be bought to satisfy the needs of the family?

Canned orange juice costs 31 cents for 1 quart 14 ounces or 15 cents for 1 quart 2 ounces. Determination of the savings resulting from buying a large can offers a fine chance for problem solving. Unfortunately the result of such computation may lead to the conclusion that for all families at all times purchase of the large can is economical. Size of family, willingness of its members to be served orange juice frequently, capacity of ice box in which unused juice is to be stored; all are factors affecting one's decision regarding size of can.

The purchase of a refrigerator for use in a summer cottage gave rise to the decisions whether or not to:

rent a refrigerator at $5 a month.

buy one in a city 100 miles distant and pay added transportation.

put in a gas refrigerator (the salesman was quite convincing).

buy a 1946 model from a used furniture dealer for $85.

buy a new model from a mail order firm for $155 plus shipping.

One of the most difficult problems faced by adults is learning to live within one's income. Parents who take great care that their children may develop mentally, physically, socially, morally and along civic lines, sometimes neglect a basic discipline—living within an allowance. Many children would rather not have an allowance, preferring the "touch" system which they say gives them more money to spend. Authorities in the field of Economic Education feel that even young children need allowances which will care not only for their school requirements—i.e., savings, milk, lunch, etc.—but also for school supplies, hobby materials, and some articles of clothing such as socks, and for the girls, barettes and hair ribbons. As the child grows older he may be entrusted with the purchase of more and more of his wearing apparel. Family councils can help the child to see where the family income goes and to understand why he can't have everything he wants.

Arithmetic in the Home

The social situations which require making quantitative judgments may more frequently and naturally arise in the home. Nevertheless, the teacher who is aware of the need for supplementing computational drill and the solving of test-book problems will utilize social situations in school. The work of the home can be greatly augmented by the unit or activity work carried on at school.

Teachers have often tried to help children gain values through wise use of their own spending money. The purchase of gifts—birthday, Mother's Day, Christmas, etc.—has been made the occasion for studying suitable presents for members of the family and for finding costs of such articles. The study of toys, games, and hobby materials desired by children has lead to a consideration of ways to earn money or to save money by giving up movies for a time. Some classes have held exhibits of objects procured by mailing box tops (and money) and have seen at first

hand both the worth while and the worthless. Through the examination of candy wrappers children have seen where they can get the most for their money.

Children have been led to see the uses of family money through activities such as "Clothing a Third Grade Boy and Girl," "Buying the Family Food," "Cutting the Electric Light Bill." In one family children were offered the amount of money saved by keeping the bill for a current month below that of the corresponding month of the previous year. Following a preliminary period in which the family existed in semi-darkness the children did adopt sensible standards and did help avoid wasting electricity.

In the School

Many opportunities for the development of profitable social arithmetic have arisen in co-operative ventures of raising the school spending money. In filling Red Cross boxes children were encouraged to guess and then see what size objects would fit into the box, to list articles which could be packed and to select committees to purchase the contents of the boxes.

Buying a present for an absent classmate, toys for a children's hospital or the juvenile ward in a general hospital, a gift for the school or classroom; these and other sharing activities have proved especially valuable when the money for such a venture has been raised by the children. Selling tickets for a special movie, collecting and selling newspapers and wire coat hangers (cleaners have been buying these for a small price each), and holding candy and food sales all have been means of raising money.

Planning refreshments for a party or other social affair requires, as any hostess knows, many decisions. A fifth grade, serving refreshments to a group of teachers attending a conference, needed to know how many sandwiches to prepare. Since no text book provided the information they turned to their mothers and aunts whom they found ate an average of three sandwiches on a social occasion. The children counted slices of bread in a loaf and found the number of loaves required. Finding tuna fish and chicken too costly for their limited allowance, they filled their sandwiches with—you've guessed it—peanut butter. They selected a punch recipe which called for a generous quantity of tea as a base.

Not only do consumer education uses make it necessary to extend the scope or arithmetic beyond computation and verbal problem solving, but even the effective interpretation of the content of non-mathematical literature requires adequate attention to the numerical references contained therein.

Social studies, science, and health texts and supplementary readers contain references to both quantity and size. The information which the author thinks important enough to present may be lost unless children are equipped with the background necessary for its interpretation and are encouraged to think about numbers which they read.

Measurement

Reading references very frequently involve measurement; e.g., distance, area, weight, liquid capacity, time, and less frequently, cubic measure. From a single reference book, THE GOLDEN TREASURY OF NATURAL HISTORY by Bertha M. Parker, come these quotations with numerical references:

"If the insects were scattered evenly, for every square mile there would be about 25 million." (p. 50)

"The robin's speed is about 30 miles an hour. The chimney swift can fly more than twice as fast." (p. 86)

"Birds range in size from the tiny humming bird which weights less than a penny to the ostrich which may weigh 300 pounds." (p. 90)

"Kangaroos are famous for the long leaps they make. The leap often measures 25 feet." (p. 103)

"There are records showing that a thirsty camel may drink as much as 20 gallons." (p. 118)

"In a single night a mole, which is only about six inches long, has been known to dig a tunnel nearly 100 yards long." (p. 119)

"The dolphin has very big lungs in which it can store enough air to last for 20 to 30 minutes under water." (p. 127)

"One giant sequoia. . . has a diameter of more than 30 feet at the base and is nearly 280 feet tall. It is as tall as a 20 story building, and there would be room for a church inside its trunk." (p. 135)

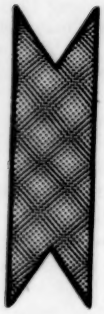
If measurements such as are quoted above are to be meaningful we must set up local "yardsticks" for ready reference when quantitation terms occur in reading situations. Heights of children, teacher, principal, classroom, building, flag pole; lengths of room, corridor, building, distance to drug store, center of city, next city or town will prove helpful for making comparisons. Often we assume erroneously that children possess judgment with which to interpret reading references. A group of third grade children gave estimates of the height of their teacher (5′ 6″) which ranged from 19 inches to 10 feet. A boy reported that a dinosaur was 90 feet long though a model of the creature could be put on the book case in the classroom.

Mention of area is frequently in terms of acres. Where possible an acre plot can be marked off for reference. The areas of the play ground, school property, and nearby park will be valuable in making comparisons. Charts showing square inches, square feet and square yards should be mounted from time to time in classrooms from fifth grade up. Frequent reference to and comparison with such units will mean more than drill on a table of relationships between units.

Weights of persons and various objects in a room can be made to serve as standards for comparison.

A collection of liquid measures and household containers displayed from time to time can be used whenever necesary for the interpretation of reading references.

To the foregoing illustrations of adult and child need for mathematical judgment can be added many more from the experience of the reader. We have seen that the social aspect of mathematics involves, among its many phases, consumer uses and interpretations of mathematical references in non-mathematical literature. While we continue to teach for mathematical understandings related to the structure of our number system, can we not work toward the translation of these understandings and subsequent computation skills into economic competence?



Evaluation In the Auburn Schools

Grace J. Arnold
Principal Washburn Elementary School
Charles W. Jordan
Principal Webster Junior High School
Arvard V. Webster
Director of Guidance

Thinking

Spring had come to the state of Maine. It pushed its way around the corners of bays and coves, up the rivers into lakes and ponds, and into the very hearts of a thousand sports-loving teachers. But schools were still in session. So while the more fortunate sportsmen poured through the latest sports catalogues and dictated orders to the nation's leading sporting goods stores, the teacher with no less enthusiasm, rewound his guides, patched up his Parmachenes and strolled down to the general store to talk over the situation.

A thing of wonder is the general store. It is the pulse, the heart throb, the very life line of the northern New England community. Situated in the geographical center of practically every New England town it serves the physical, political, and financial need of nearly every person within a radius of many miles. It is here that staples are purchased for family living: flour, utensils, clothing, medicines, and ingredients for the baby's formula. Here the caucus is held before the town meeting. Here the farmer obtains necessary credit for grain and seed so that he may be ready for the growing season and the summer trade.

So the teacher who came to speak of trout and salmon, of spinning lures and white water went home to marvel and think. He thought of his profession —— its aims and ideals and its future. And he searched in his mind and questioned, "Why is not *education* thus? Why do we have in our curricula merchandise long outmoded that is gathering dust and of no use to the community that it professes to serve? Why are educational selling techniques geared to sell to pupils, homes, and communities items that are shop worn and long past use and serve no specific need? Is it not time to take an account of stock of what is on our educational shelves?"

All of this he thought as he drove daily from his home to where he taught in Auburn, Maine, a city of 4300 pupils, 163 teachers, and 14 schools. So he thought and his thinking bore fruit. For not only was he a teacher but he was also the superintendent of schools.

He called a meeting of his teachers and told them his thinking and asked their advice. They gave it due consideration and were of the same opinion and thus evaluation came to the City of Auburn.

Planning

Obviously the first step involved the selection of a consulutant or consultants. The choice of a member of the research committee of the "Cooperative Study of Secondary Schools," from the faculty of Boston University, was most fortunate. A specialist in the elementary field was employed to assist him. Thus Auburn became one of the first communities to plan an over-all evaluation of the entire system. But that is getting ahead of the story.

A steering committee was selected by the superintendent consisting of the high school principal, the director of guidance, the two junior high principals, two elementary principals, and two elementary classroom teachers. This committee met early in May to look over the criteria and discuss possible approaches. A second meeting with the consultants resulted in a plan to present the whole evaluation procedure to the teachers at an all day workshop on the day preceding the regular opening of school in September. It was generally agreed that lay participation would be a desirable part of the evaluative procedure especially from a public relations point of view, but only after the teachers had completed their evaluation of the major educational areas. The feasibility of inviting teachers from other communities which had followed a similar self-evaluation plan to visit our schools for several days and present their findings, was considered but no decision was made. (It was later decided not to include this phase of the suggested program.)

Learning

The workshop was well organized. The morning session consisted of a presentation of the need for evaluation by the superintendent. Then the procedure was explained by the consultants, and two guest teachers from communities which had recently completed secondary evaluations emphasized the benefits already apparent in their school systems. All the teachers were assigned to one of the major area committees dealing with Pupil Population, Education Needs of Youth (philosophy), Program of Studies, Pupil Activities, Library Services, Guidance Services, School Plant, and School Staff and Administration with members of the Steering Committee acting as temporary chairmen. For an hour and a half these committees

studied the questions dealing with these various major areas and discussed their implications as applied to our own school system. Then for the remainder of the afternoon the teachers met in subject area committees and followed the same procedure with the evaluative criteria dealing with specific subject areas.

The consultants visited all of the groups answering questions and explaining the methods to be used in filling out the various questionnaires and generally clarifying the working plan to be followed. A dinner was provided for the entire staff in the evening and the teachers were told that they would soon have an opportunity to vote their acceptance or rejection of the plan and were given to understand that its acceptance would involve a minimum of 40 to 50 hours of committee work for every teacher in addition to his regular teaching duties.

Two weeks later a vote of the Auburn teachers was taken which showed 82% in favor of the survey, 11% not voting and only 7% opposed. And so the ship was launched!

The teachers were given the opportunity to make a first and second choice of the major area in which they preferred to work, as well as to select their subject area. Fortunately when the Steering Committee reviewed their choices the distribution was such that practically all were assigned to the area of their first choice.

Doing

Now we really began to move. The major area committees met and elected permanent chairmen to preside at regular weekly meetings.

Evaluation booklets in the various areas were given to committee members to aid in crystallizing thinking concerning our school services. These ten to thirty page booklets contained checklists consisting of provisions, conditions, or characteristics found in good elementary and secondary schools. The instructions cautioned that although a school might be lacking some of the recommended provisions, it might have other compensating features. Space was provided to record these features under comments. The checklist items were to be marked on a scale ranging from extensive through limited and missing. The actual evaluation of each section represented a summarizing judgment after all evidence, including results of observation, consideration of checklist items and other available data was considered. The evaluation ratings were made on a scale ranging from excellent to poor and missing.

The first committee meeting was concerned with an explanation of the nature and organization of each area. Then with the consultants to advise and interpret at both the elementary and secondary levels the committees settled down to decide to what extent the checklist items were provided for in our schools.

It was suggested that the first unit to be completed should be that of Philosophy and Objectives. The development of this basic philosophy was perhaps the most difficult task of all since it was to be the backbone of the entire survey. The first draft was presented to the teachers for changes and amendments. Then the committee made revisions and again returned the statement to the teachers for further comments. The final draft was accepted prior to the beginning of the work in the instructional areas.

Our next really big venture was a meeting of the entire

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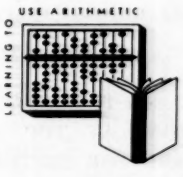

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teaching staff at which time the chairman of each major area committee reported his findings to the group. As each report was read, it was discussed, changes were suggested and made, and finally the reports were accepted by a majority vote of the assembly. It is interesting to note that although at times discussion on certain items waxed hot and furious, few changes were made.

The committee members left the meeting with the feeling that the accepted reports carried with them the final approval of the entire group.

Now the tempo changed a bit as work was started in the instructional areas. Here the teachers were really going to be looking at themselves, their methods and materials. The question was — could this section be done as objectively as the major areas?

After looking over the booklets it was decided that it would be well for each elementary school to meet individually to become acquainted with the criteria for pre-primary, language arts, arithmetic, science and social studies before meeting in system-wide committees as the secondary committees were doing.

This proved to be another splendid learning experience for all. Teachers in the intermediate grades got to know much about the work done in the primary program and primary teachers came to realize more about the problems met in the intermediate grades. Then they met in system-wide committees to check the criteria on an over-all basis.

Schools were closed one day in March for an all-day workshop session so that another deadline might be met. This was a day of intensive study but with enthusiasm still running high.

While all this work was being carried on by the teachers, the consultants were busy, too. Not only were they available for many of the weekly meetings — they were also finding time to visit our schools so that they might observe first hand how our program was being carried on. Although teachers were a trifle apprehensive at first about these visits, they soon found that both consultants came, not as critics, but as helpers, willing to share their experience and ideas. One out-growth of these visits was a request by the teachers that the elementary consultant devote an afternoon to a demonstration of teaching techniques in the language arts area. This afternoon session turned out to be one of the highlights of the survey.

Early in January, after the teachers had completed their reports in the major areas and started work in the subject fields, letters were sent to every organization in the community including churches, service clubs, P.T.A.'s, granges, etc., asking them to send two interested representatives to a meeting for the purpose of planning lay participation in the school evaluation. The results were gratifying. Over a hundred citizens met in the high school auditorium with the teachers to hear the consultants outline a plan for lay committee action in the major areas following the same procedure the teachers had recently used.

One of the members of the Steering Committee acted as consultant to each of these lay committees. They elected their own chairmen and went to work. And how they did work! Every day found lay committee members visiting our schools, asking questions, checking pupil activities, looking over the buildings and equipment. Two evenings a week the high school was a beehive of activity as committee members reported their findings, exchanged opinions, and accepted assignments to be completed for the next meeting.

By the first of May all the lay committee reports were completed and the chairmen presented them to the Steering Committee and the consultants. This meeting was described by one of the consultants as the most stimulating educational experience of his career, and resulted in a revision of our plans for a public mass meeting. Instead of having teachers present the findings of the evaluation to the public it was decided to have one member of the Steering Committee explain briefly the procedure followed, and the rest of the program was devoted to reports given by the chairman of the lay committees and brief summaries by the consultants.

The public relations value of this meeting was terrific. A large, interested audience saw a number of our leading citizens, who apparently knew whereof they spoke, putting the spotlight on the educational needs of Auburn, and they minced no words. To put it mildly, the people were impressed.

Outcomes

Already, as we look at the survey in retrospect, we can see some of its effects on the Auburn school system. Some of the changes can be classified as intangible, others as definite improvements in instructional areas, and others more obvious, such as increased and improved school plants and equipment as the result of direct expenditures.

There is a noticeable change in teacher attitudes and an increased recognition of the relationship of everyday teaching to total educational objectives. Teacher morale has been strengthened. The fact that our teachers put in at least the equivalent of a full week's extra work on the survey has made them more interested in the school system as a whole, more cognizant of the need for improvement, and better teachers in their own areas. Administrators, too, have been stimulated to implement some of the recommended changes. An alerted public has shown itself ready to support this effort to improve our schools.

During the evaluation it was emphasized that many improvements could and should be made which would not involve additional school expenditure. Among those already evident is a revision of the junior high program allowing additional time for homeroom organization, more frequent assemblies, a well organized group guidance program in grades seven through nine, shop and homemaking classes for the pre-college students, and other planned activities during school time. The seventh grade reading program has been reorganized upon the basis of individual achievement and performance levels. There is also under way a thorough investigation of readiness and reading at the elementary level. Our whole policy

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in regard to the education and training of exceptional children has been clarified. We are getting more and better classroom supervision. We have prepared and presented a new salary schedule to the School Committee. During National Education Week we published and distributed over five thousand copies of a booklet highlighting the more important aspects of the Evaluation Report. And all this without spending any more money on schools.

Material changes too, have been effected by placing emphasis on some of our most pressing needs. We shall have eight new elementary classrooms and two new cafeterias completed this winter. We have new audio-visual equipment and an expanded program in this area. New textbooks and supplementary materials are helping us to provide more effectively for individual differences in the teaching of reading and arithmetic. We have increased the number of our non-teaching principals. We have improved library facilities and playground areas and purchased additional equipment.

Looking Ahead

This may sound as though all our problems are solved and Utopia is at hand. Far from it. We still have much to do and the survey has brought many of our objectives and aims into focus. For instance: we look forward to increased participation on the part of classroom teachers in matters pertaining to total school policy. We hope in the near future to strengthen our staff by adding a curriculum specialist to work primarily in the elementary area. We want an active Citizens' Advisory Committee organized on a permanent basis. We'd like to see standing committees of teachers working continuously on curriculum development, and a printed program of studies for the secondary schools.

Other objectives include adequate art instruction at all grade levels and a stronger health and physical education program throughout the system. We realize the necessity for developing an adequate program of in-service training and professional growth. We are in desperate need of a new secondary school plant. Yes, the road ahead is long and much of it will be steep — but thanks to the survey we feel that we know where we're going, and we're on our way!

(Consultants: James F. Baker, Associate Professor, Boston University, and B. Alice Crossley, Associate Professor, Boston University.

Material: *Evaluative Criteria — Cooperative Study of Secondary-School Standards — Copyright* 1950, and *Elementary Evaluative Criteria—Copyright* 1950.)

REASON FOR READING

(Continued from page 104)

Promoting reading today, when a dozen other interests compete for our pupils' time, requires energy and enthusiasm. More than that, it demands specialized knowledge of two kinds: a thorough understanding of what can interest children and a wide acquaintance with books in many fields and on many different levels of taste. The teacher thus equipped often succeeds in making the connection between the right book and the right pupil and thereby wins one more child to the belief that reading is one route to a richer life.

The United States

MUZZEY • KIDGER

A rich and challenging presentation of the American adventure. Important political, economical, diplomatic, and social trends are meaningfully developed, yet a chronological sense of history is preserved. Contains handsome illustrations and a dynamic map program. Workbook and manual are available.

Plane Geometry REVISED

Here is a geometry outstanding for its mathematical soundness, visual manner of presentation, and practical applications. The revised edition has more extensive correlation of plane geometry with algebra, sections on co-ordinate geometry, computation with approximate numbers, and new exercises and review.

KENISTON • TULLY

Ginn Basic Readers

Grade 7: DOORWAYS TO DISCOVERY
Grade 8: WINDOWS ON THE WORLD

ENRICHMENT READERS

COME WITH US (pre-primer level) and UNDER THE APPLE TREE (primer) give extra practice in easy reading.

Write for full information.

Sales Offices: New York 11
Chicago 16 Atlanta 3
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GINN AND COMPANY

VACATION MAP

Many children travel during vacations. In one room there is a large map of the state and a large map of the United States. Each child made a little flag with his name on it and pin-pointed the place he visited on his vacation.

Stories and pictures on the bulletin board went with the maps. They told and illustrated the things they did and the ways they traveled.

Perhaps the teachers' vacations would make an interesting display on the hall bulletin board. It might interest children, visiting parents, and the other teachers.

IF WINTER COMES

This chart and directions were observed on the blackboard in an intermediate grade classroom.

Fill in the names of the seasons: Spring, Summer, Autumn, Winter.

	Sept. Oct. Nov.	Dec. Jan. Feb.	Mar. Apr. May	June July Aug.
United States				
Argentina				
Central Europe				
Union of So. Africa				

TIME-LINE

Seen in a fifth grade classroom. The time-line was just a strip of brown kraft paper about one foot wide and twenty or thirty feet long. It had a heavy line drawn down the middle and was laid off in centuries. As the pupils read about events, either current or historical, they noted them on the time-line. Some of the recent centuries were crowded. Some were a bit sparse. Even current events found a place.

JUDY PUZZLES

A number of new Judy Puzzles arrived for the use of the children. Before they were put out for use the teacher painted a number in the lower left hand corner of each puzzle and painted that same number on the back of each piece that goes with the puzzle. Consider the value of such foresight when puzzles get mixed, or when a piece is found on the floor.

INTEREST CENTERS

The back of a piano is often unsightly at best. Try covering it with beaver board or cork board. The piano pulled out from the wall can then be used as a partition to set off special work areas and interest centers in the classroom.

ART — SCIENCE — FUN

In an art class the children had painted pictures showing different kinds of skies. Under each was a description and a prediction of the kind of weather that could be expected to accompany it. The pictures were interesting and attractive. The science learning was concrete. Weather prediction was fun.

PRIMARY NEWSPAPER

In a primary classroom the children were just learning to write their own newspaper. They had a chart pocket holder made from brown kraft paper. They used strips of lined chart paper for sentences. When a child had a news item written on a strip of paper it was inserted in the pocket holder. At the end of the day the accumulated news was read. A new date line was inserted each morning. This permitted the usual errors and changes without ruining the large sheet of paper.

SCIENCE EXPERIMENTS

Seen on a printed chart in a classroom:

Steps in a Science Experiment.

1. What we wanted to know.
2. What we used.
3. What we did.
4. What we found out.

(Department of Elementary Education, Richmond, Indiana.)

A WEATHER CLOTHESLINE

Blue means clear.
Lavender means change.
Pink means rain.
Dip clothes in a solution of:

1. gum arabic — ½ oz.
2. Cobalt chloride — 1 oz.
3. sodium chloride—½ oz.
4. calcium chloride—½ oz.
5. water — 1 oz.

JOB EVALUATION

Employers are constantly evaluating the young people from our schools who find employment in sales and office work. "Try-It" has included an "Employer's Rating Scale" which students may find valuable in self-evaluation. Many of these same performances, techniques, and traits rated by business men are also applicable to teachers, supervisors, administrators, and school clerks. How do you rate?

Employer's Rating Sheet Office Work Experience

Please use the following grading system in rating the employee.

1. E (Excellent) An unusually high grade. About 5% of the employees merit this rating.
2. VG (Very Good) Well above average. About 20% fall in this group.
3. G (Good) . . Average. About 50% are in this group.
4. F (Fair) . . Definitely below average. About 20% fall in this group.
5. P (Poor) . . Decidedly lacking in personal ability and, or effort. About 5% or less are in this group.

Typical tasks performed:

Skill Performances: Rate only items which apply to employee's work.

Nature of Difficulty

Typewriting .....
Filing .....
Bookkeeping .....
Shorthand .....
Machine operation
Name of Machine.....
Spelling .....
Grammar .....
Punctuation .....
Handwriting .....
Arithmetic .....

Business Techniques: Rate only items which apply to employee's work.

Nature of Difficulty

Meeting people.....
Businesslike habits .....
Relations with other
employees .....
Follows company
policies .....
Use of telephone .....
Use of dictionary .....
Follow office system .....
Office housekeeping .....
Others .....

Personal Traits:

Nature of Difficulty

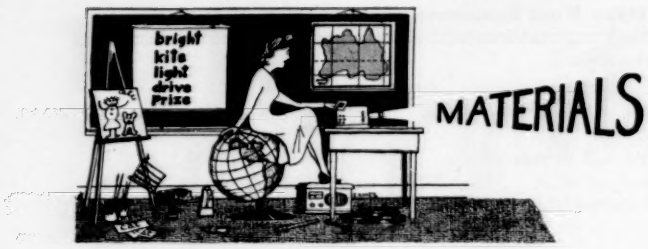
Appearance .....
Cooperation .....
Dependability .....
Health .....
Honesty .....
Manners .....
Personal Hygiene .....
Responsibility .....
Adaptability .....
Accuracy .....
Industry .....
Loyalty .....
Punctuality .....
Speech .....
Others .....

Please list most outstanding favorable items.

Please list items needing most improvement.

(Paul F. Muse, Indiana State Teachers College,
Terre Haute, Indiana.)

Signature of person making rating.



Educators' Progress Service, Randolph, Wisconsin, publishes three thick books which have literally thousands of entries about free materials for the teacher. One is the *Elementary Teachers Guide to Free Curriculum Materials* (1138 titles), "how to use them" articles, units using the free materials in conservation, art, and handwork, social studies, language arts, accident prevention and safety, for all grade levels. *Educators' Guide to Free Films,* and *Educators' Guide to Free Slidefilms* are the other two volumes.

Write to them for prices (say you saw this note in the JOURNAL OF EDUCATION) then consider school or PTA funds for their purchase. With the new postal rates for educational films (they now travel at *book* rates), films are really *free.* Where an average round-trip parcel-post cost of a film from 200 miles away was nearly $3.00, the cost is now nearer 30 cents! Some companies are prepaying postage.

Field trips via film can be taken by children to learn about

Good Growth (from Good Land)
Good Homes
Pure Water

Each film is about six minutes in length, and is suitable for grades two through eight——or even higher. These are imaginatively and thoughtfully prepared, and use cartoon techniques to speed up learning. Ask John C. Gibbs, Audio Visual Dept., The Conservation Foundation, 30 East 40th Street, New York 16, N. Y., about seeing the films.

The Earth, Our Planet —— a 19-minute motion picture film made in consultation with Professor Wlodzimierz Zonn, director of the Warsaw Observatory is "based upon one of the scientific theories as to the origin of the earth." Available for a small charge through Brandon Films, 200 West 57th Street, New York City. This film, and a *free filmstrip,* "The Life of Nicholas Copernicus," with speech notes in English are advertised by the Embassy of the Polish Peoples Republic, 2640 16th Street N. W., Washington 9, D. C., from which address the filmstrip may be obtained.

Singer Science News —— published monthly during the school year for schools using the *How and Why* science books, is available in single copies upon request (use your school's letterhead).

There are always five to ten simple experiments, using home materials, included. L. W. Singer Co., Inc., 249 West Erie Blvd., Syracuse 2, N. Y.

General Science Handbook for Grades 7, 8, *and* 9. There are hundreds of activities, many suitable for children in intermediate grades. Secondary Curriculum Development Bureau, New York State Education Department, Albany, N. Y.. Ask for prices.

Annual rating of comics for the spring of 1953 appears in (but not by) *Parents' Magazine* for October, 1953. Comics have been getting worse in the last three years, with 33% "no objection" now, 21% "some objection," 32% "objectionable," 14% "very objectionable." Criteria set up by the Cincinnati Committee on the Evaluation of Comic Books were used in the study.

Worthy of free advertising is the new Universal "2-N-One" Child's lunch kit with a *wide-mouth* vacuum food container, $3.49 complete, $2.49 for the container which holds 10 ounces. Important because a hot-dish noon meal, where children carry their lunches, is good insurance for energy supply.

FLOAT OR SINK?

Will it float? *No!* It sinks to the bottom! Let's try some other things, like apples, potatoes, all kinds of wood, eggs (new-laid or old?), plastic toys, and hollow and solid things.

Children from Grade II, Edith C. Baker School, Brookline, Mass., Mrs. Ellen M. Sullivan, teacher, tried many of these things. Equipment? Just a pail of water!

(If you take pictures of children to send in to the Journal of Education, note some good features of this picture:)

1. Children are watching the center of interest, *not* the camera.

2. Expressions on one or two faces are clear, and a few other children do not shadow the principals.
3. The background is simple, yet suggests *where* the experience took place.
4. Don't get nearer than your camera will focus; eight feet for box cameras, closer for other types — look at the distance scale.
5. Use a flash bulb, with a *diffuser* over it — a layer or two of nylon stocking will help.
6. Send a contact print *and* the negative if you cannot have a 5 x 7 *glossy* print made.
7. Don't forget to paste (*not* write) information about the picture on the back of the print.

The Museum Filmstrip Club. A year's subscription ($25) will send each month (8 months) a color filmstrip which is a "field trip on film." The words "curriculum centered" are appropriate. Museum Extension Service, 10 East 43d St. New York 17.

Ask DuPont, Wilmington, Delaware about LUDOX. It is a colloidal silica product which has been added to some commercial floor-waxing compounds. Doesn't change the appearance or wearing qualities, and keeps the wax from being SLIPPERY!

Wonderful tape-recordings for a song. . . . Tapes for Teaching is operating in 24 states. Send in a new or used magnetic tape to the state center, and get it back with classics acted by great readers, orchestral selections, dramatizations of history. Ask for a catalogue from Minnesota Mining and Manufacturing Company (they are the Scotch Tape people) St. Paul, Minn. for any one of these states: Ariz. Calif. Conn. Ill. Iowa. Mass. Mich. Minn. Mont. Neb. N.J. N. Mex. N. Y. No. Dak. Ohio. Okla. Ore. Penn. R. I. Tex. Utah. Va. Wash. Wis.

NOTE NOTE NOTE NEW LOW BOOK RATE ON FILM MAILINGS Pennies instead of dimes will get audio-visual materials from here to there and back again. Public Law 141 reduced the rates back in October, but many offices still have not had much business and so do not know about it. If your local man wants more information, you write to R. L. Sheridan, Asst. Director, Division of Mail Classification, U. S. Post Office, Washington 25, D. C. Teaching Films Custodians is making no charge for transportation for its grand teacher-planned films.

New 1954 Catalogue from Society for Visual Education, Inc., is free if you write on school letterhead. There are 56 pages of commercial materials. 1345 Diversey Parkway, Chicago 14.

Social studies and history teachers would find AMERICAN HERITAGE most exciting. A recent issue celebrating the tercentennary of New York City had seven beautiful color prints (full page) and scores of reproductions of museum-grade etchings, woodcuts, and maps. The King's College Controversy, stories on John Peter Zenger and the JPZ Memorial tell the story of the first legal battle for freedom of the press. Fire! with pictures of old pumpers and fire companies; and a Diary of George Templeton Strong would interest any boy or girl in grades 7-12. All this for a year for $3!

Tape Recording, Louis A. Leslie, has nine chapters on the use of TR's in business education. But the whole booklet shows so many ways in which they can be used in any class that it is a good $1 spent. Borrow a tape recorder, send for the book, and try an experiment in education. Minnesota Mining and Manufacturing Co. St. Paul 6, Minn.

Then and Now in the United States, 18 filmstrips in color. For sale by Silver Burdett Co., offices in N. Y., Chicago, Dallas, San Francisco.

Pageant of America Filmstrips. 30 of them from Yale Univ. Press, 386 Fourth Avenue, N. Y. 16. Write for descriptive folder and prices. No. 1 is "The Story of the American Indian"; No. 30, "The Rise of America as a World Power." Guides by Dr. Wm. H. Hartley, Chairman, A-V Committee of the National Council for the Social Studies.

Bird-lovers and elementary science teachers who have play-backs that will take 12" LP recordings will want "Bird Songs of Dooryard, Field, and Forest," 49 different songs on the one record. The Massachusetts Audubon Society says they are excellent. Ficker (yes FIcker) Recording Service, Old Greenwich, Conn.

Where to Buy 2 x 2 Slides, compiled by Elsie A. Phillips, Enoch Pratt Free Library, 400 Cathedral Street, Baltimore 1, Md. 22 pages, 10c. 200 subjects, 85 slide sources.

Tables for a modern classroom, any grade. These are **square,** with very slightly rounded corners so they won't jab you. They have no pencil grooves, come in sizes 30, 33, 36 inches square, 29½ inches high. Tops either of fir or Textolite plastic. Intended for banquet and cafeteria tables, they are the very thing for putting together in all sorts of combinations in a classroom. Two or three of these make a display for an elementary science exhibit; six of them in the corridor and a parent's night is dressed up with children and their airports, Indian village, and bird-feeding trays.

Another table-Trapezoidal Adap-table nests in 2" heights, makes interesting combinations-hexagons, lozenges, right-angled display units. Brunswick-Balke-Collender Co. 623 So. Wabash, Chicago, Ill.

Are you a rural superintendent? Get your local electrician to rig up a gasoline generator that can travel on a small trailer or in your trunk that will deliver enough juice to run a motion picture projector. Then take it with you wherever you go. Show your schools without electricity the latest in motion pictures for the classroom; you can have conferences with some of the teachers while others are with the children, then shift. You will be popular with everyone!

The
New England Teachers' Agency, Inc.

407 Libby Bldg **10 Congress Sq.**
PORTLAND, MAINE

Doris A. Lewin, Manager

Member, Nat. Association of Teachers Agencies

GROUP DYNAMICS AND GROUP PROCESSES

In recent years there has been an increasing amount of research in the functioning of groups, into factors affecting the performance of groups as groups, and into the relationship between group processes and various aspects of the academic, personal, and social growth and development of children. The writings and researches on these topics come under various labels with two of the more prominent being group dynamics and group processes. The material being written on group dynamics and group processes contains much information which is empirical and pragmatic based on experience, logical analysis, even conjecture. Perhaps more of this information collects under the heading of group dynamics, with the research being subsumed under the title of group processes, a more descriptive term. This is probably not accidental, for the word dynamics has a more enthusiastic connotation than does processes. And research is usually unspectacular. This is not to suggest that information and knowledge which is not based on research is unworthy or invalid, rather that the results of research are more confining. In reporting research, the writer must continually qualify his statements, pointing out the restrictions which his sample or his procedure impose on his results and hence upon his conclusions. The reader (and the writer) does not find this an especially satisfying arrangement. We like clean-cut answers; we dislike ifs and buts. We find uncertainty and incompleteness frustrating. Teachers especially seem to desire absolute answers, which unfortunately research seldom provides. The teacher is dependent upon her own ingenuity and professional judgment in applying the results of research to her classroom practices.

This prologue completed, the more important question of the importance of knowledge regarding the function of groups as it relates to education of human beings may be considered. From the day a child enters school he is one of a number of individuals. Rarely is any learning task in the school performed in the absense of other children. Similarly, the teacher starts the first day of school confronted with a number of children. Rarely can she work with an individual to the complete exclusion of others. In such a setting it is important to understand how groups function, ways in which they are facilitated or blocked, what can be expected from groups in attaining the varied educational goals that schools set for themselves. In this limited space a comprehensive picture cannot be given, but such information will be reported periodically.

Class and Group

A distinction should be made between class and group. A teacher may have any number of children in a class without having a "group." Cunningham [1], in a book concerning group behavior of boys and girls, identifies five types of interaction in class groups: (1) planless, (2) adult rule, (3) teacher planning with individuals, (4) teacher-directed group planning, (5) group planning. The probability for the existence of "groups" is greater in the last two types than in the first three, in which the class is likely to include greater numbers of unrelated individuals, children who do not "belong" to any particular group. Group behavior, like individual behavior does not just "happen." Both are caused; both are modifiable. Both are subject to the guidance and direction of the teacher. Groups can be utilized not only for academic growth, such as elementary reading groups, but also for personal-social development. Illustrative of the latter point is a study by Gibb and Gibb [2] in which "class activities (college level) were centered around several subgrouping methods designed to increase effective group participation." The instructor played a constantly diminishing role in the decisions and activities of the group, gave training in role playing, group goal setting, problem centering, and other procedures for increasing effective participation in group. No formal lectures on course content were given in this group, compared with other sections in a general psychology course.

Gains in factual knowledge as measured by traditional objective and essay examinations were comparable to those sections taught in the traditional lecture procedure. Significant gains were made in "role flexibility, self-insight, leadership and likeability ratings, and group membership skills." These findings verify previous reports that group procedures will not cause miraculous gains in academic achievement, that very likely the gains will be approximately the same in either procedure, but the greatest gains will occur in the effectiveness with which people work together.

College Class Discussion

Another study which has a bearing on the question was done by Smith and Dunbar [3] which showed that the participation in class discussions at a college level tends to be less conformist in his behavior than the non-participants. The participant not only was well-informed, but had high self-confidence, social independence, dominance, and was socially aggressive. One wonders if this would hold true if there was more emphasis on group procedures in the intermediate and secondary grades. Would not a happier medium be achieved?

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1. Cunningham, Ruth, and associates, *Understanding the Group Behavior of Boys and Girls*, New York: Columbia University Bureau of Publications, 1951, p. 445.
2. Gibb, Loraine, and Gibb, J. R., "The Effects of the Use of 'Participative Action' Groups in a Course in General Psychology," *American Psychologist*, 1952, 7, 247.
3. Smith, H. C., and Dunbar, D. S., "The Personality and Achievement of the Classroom Participant," *J. Educ. Psychol.*, 1951, 65-84.

Smith and Dunbar [5] report that achievement was no greater among participants than non-participants as far as a move of improvement was concerned. They conclude that at this level that it was the adjustment of the individual which effected the degree of participation rather than the reverse—a finding which conflicts with what the Gibbs report if one overlooks the fact that the Gibbs were providing training in group participation, whereas participation in the latter study was voluntary with no procedures provided for training.

Basketball

Effectiveness of group teamwork is correlated with the perceptions that group members have of each other according to the results of research by Fiedler, Hartmann, and Rudin [4]. Using sociometric tests with high school basketball team, the relationship between the team effectiveness measured by proportion of games won and choice and rejection of team-mate ("With whom can you play best? With whom can you play least well?") as well as with self-description and predictions of team-mates choice, these investigators found the choice patterns were related to team effectiveness. The more highly chosen persons on the effective teams were those whom the authors describe as "task-centered," whereas the highly chosen person on the less effective teams confer status on warm, relationship-oriented individuals. While giving verification to empirical convictions we hold regarding the importance of interpersonal attitudes to the functioning of groups, a question is raised as to whether the criterion the authors established was that which the team members on the less effective teams had in mind. They may have been less concerned with skilled performance as measured by victories than with satisfaction of playing with particular individuals for its own sake. The earlier research of Jennings [5] on characteristics of the choice process in human behavior distinguishes between "sociogroups," in which the structure of the group is based on a collective criterion such as common vocation, and "psychegroups," in which the group "structure is determined by a *private* criterion which is totally personal in nature." Apparently, an individual's capacity to function in sociogroup roles depends upon his first having some degree of mutual acceptance of a personal and private nature. Individuals have to first see themselves as being personally wanted before they are able to face the pressures and make the self-restraints necessary in task-centered groups. The results in the Fiedler research suggests that the desires or needs for warm, interpersonal relationship was taking its priority over basketball for basketball's sake in the "less effective groups." Teachers can be effective in working with and developing interpersonal relationships in the classroom. Seven fifth grade teachers in seven different schools cooperated with White [6] in a study of peer group acceptability at that grade level. Seven intact class groups were used. The groups were heterogeneous with regard to tested intelligence. Each teacher worked toward the usual academic goals, but they varied in the size and kind of group used. Two teachers didn't use small groups but worked with the entire class, three used small flexible groupings, two used ability groups. Before and after sociometric tests were given as well as achievement tests.

Use of Groups

None of the procedures had an advantage as far as academic achievement was concerned, but the small flexible grouping had the advantage of having fewer isolated individuals (those chosen by one) and fewer individuals having low acceptability status (seldom chosen). Furthermore there was less disparity as far as extremes of choice was concerned in the classes in which small flexible groups were used—in other words a higher percentage of children fell in the middle range as far as acceptability (extent to which they were chosen) was concerned. The authors concluded that teachers can use techniques such as small, informal, flexible groups effectively in meeting the personal and social needs of children; and that skill in promoting group cohesiveness is important.

4. Fiedler, F. D., Hartmann, W., and Rudin, S. A., "Social Perception Measures as Predictors of Effectiveness in Basketball Teams," *American Psychologist*, 1952, 7, 313.
5. Jennings, Helen, *Leadership and Isolation*, New York: Longmans, 1950, p. 347.
6. White, H. D., "A Study of Peer Group Social Acceptability at the Fifth Grade Level," *J. Educ. Res.*, 1953, Sept., 57. (Weston)

OBSERVED IN A SIXTH GRADE

On a table at the front of the classroom was a collection of miscellaneous electrical gadgets, such as batteries, magnets, old toasters, plugs, fuses, electric bells, cords. wires, and light bulbs. On the blackboard was a list of terms such as circuit, generate, connection, parallel, series, current, and resistance. The assignment was one simple question: Can you use any of the material on the table to illustrate one of the above terms?

EAST IS EAST

Flash cards with the words NORTH, SOUTH, EAST, and WEST were placed on the appropriate walls in a classroom and left there for several weeks. These direction cards proved very helpful to children.

SEATWORK

Fold a rather large square of brown kraft paper into sixteen squares.

Directions: Color each square a different color.

Outcomes and Values: Color harmony, interesting design, muscular coordination, attractive display material, may be repeated again by pupils without direction, minimum time required by the teacher for preparation or marking.

KINDERGARTEN RUGS FOR FIRST GRADE

The kindergarten type of rugs may also be used to a good advantage in first grade where small groups are learning to read while other children work or play. Spread on the floor, these rugs make an excellent noise-proofing pad for children who are working with tinker toys or blocks.

NEW BOOKS

THREE USEFUL BOOKS ON THE TEACHING OF SCIENCE

Classroom teachers have found that certain professional books are more useful in their work than others. Most teachers can name only a few books that are always kept near her desk, to help solve day to day teaching problems. To be labeled "a useful book" on the teaching of science in the elementary and junior high school, a book should have won its place at some teacher's right hand.

Elementary-School Science and How To Teach It[1] by Blough and Huggett: *Modern Science Teaching*[2] by Heiss, Obourn, and Hoffman: *Teaching Science in the Elementary School*[3] by Burnett, are three such books.

There are several reasons why any teacher, regardless of her interest in science, might want to dip into one of these three books. Occasionally a teacher is looking for a new learning activity to reinforce the children's understanding of material that has already been taught in several ways. One of the tested activities the teacher would find, with just a bit of a twist, might fit the situation.

If a teacher wondered why science should be taught in the elementary schools, a few pages would tell her. Science information for a teacher's personal use is offered by two of these books. A good way for a teacher to satisfy a curiosity about the extent of the "field" of science teaching would be to scan the table of contents of any of these books.

Before any classroom teacher takes steps to acquire permanent possession of a professional book on science education, careful consideration of the book's value is very necessary.

A teacher who does not enjoy reading books about educational methods should try the first few pages of *Elementary-School Science and How to Teach It.* Here is pleasurable reading. From the start the authors put the reader at ease. The authors will not permit the idea of teaching science to frighten anyone. In fact, seven strong reasons why any teacher will succeed in teaching science are given.

New possibilities in familiar classroom situations are sketched. The way that children learn science is outlined. In a short while the reader of this book may be convinced of one point, science teaching is not very different from teaching other subjects.

Of course there is a body of information involved in the teaching of science. There are, also, certain activities of children that seem to best contribute to the gaining of the objectives of science education. Much of the book is concerned with the subject-matter of needs of elementary school teachers. There is also a complete fund of experiences for children.

Each of the nineteen chapters is divided into two parts. The "A" parts attempt to tell the teacher what she wants to know about an area of science. The "B" halves of the chapters describe some situations in which the children can learn what they want to know in that area.

This splitting of chapters seems to be rather practical. A teacher with a question about science can look for the topic in the table of contents. After reading the "A" part of the chapter the teacher can then decide if the children would profit from learning some of the material. Flipping a page to the "B" half of the chapter brings the teacher an explanation of a few plans for helping the children learn the material.

Probably many teachers who run into problems in the classroom would like best to actually watch some other teacher conduct a class in a way that actually solves the same problem. If this opportunity were available to all teachers who had classroom problems there would be little need for books on methods of teaching.

It might be said that a professional book can substitute descriptions of good classroom situations for actual observation. Blough and Huggett include many word sketches of periods of activity in classrooms. The important factor in these classrooms is that the teacher is interested in science. Many of these activities could be applied to several grade levels. Others could be adapted or abstracted by the reader of the book.

Some of the suggested children-out-of-their-seats activities, however, seem to involve only a few children. The question arises, "What is the rest of the class doing?" Perhaps the other children will be content to watch. It might be that small groups of children could take turns using equipment. The authors may feel that a classroom teacher would have a ready answer to the question. But is the problem a simple one?

The value of any book depends of course on the needs of the reader. Blough and Hugget state in their preface that this book "has been prepared for use in courses which combine the methods of teaching science with a survey of the science subject matter." A teacher who was a student in such a course would want to find time to read the book from cover to cover.

The format of the book is attractive. The type is easy to read. There are illustrations to help the reader understand science. With the material on methods are illustrations of children involved in science activities. This can help the reader gain some familiarity with science learning by children.

Certain sections of this book might be studied alone. A broad picture of the physical and biological world can be gained by studying all the information in the "A," or content, parts. Certain chapters cover the objectives in elementary science, and ideas for organizing the science program.

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[1] *Elementary School Science and How To Teach It;* Glen Orlando Blough and Albert J. Huggett; New York: Dryden Press, 1951.

[2] *Modern Science Teaching;* Elwood D. Heiss, Ellsworth Obourn and Charles Hoffman; New York: Macmillan Company. 1950.

[3] *Teaching of Science in the Elementary School;* Raymond W. Burnett. New York: Rinehart and Company. 1953.

Scanning the seventeen page bibliography offers a good way to get a picture of the field of elementary science education. It can be seen who has done various types of research, what publishers offer science books for children, which states have formulated courses of study in science, etc. Many teachers want to know sources of films and other multi-sensory teaching materials. An adequate list is included.

There is no doubt that any classroom teacher will find it helpful to read some material about methods of science teaching. Many teachers have appreciated having a source of science information that goes beyond the childrens' books, yet it is not technical. *Elementary-School Science and How to Teach It* is a two-in-one package of value.

Modern Science Teaching, on the other hand, is entirely a methods book. The authors, Heiss, Obourn, and Hoffman are themselves teachers of science, and they address the book primarily to other science teachers.

Perhaps any one who approaches this book should do so with an established interest in some area of science education. In the preface the authors state that they hope they can set forth some "tricks of the trade." Obviously, such tricks might delight a teacher who has had experience with the science education "trade"; a person without such experience might find the tricks mystifying.

Anyone, however, can get from this book a picture of a twelve-year process that is now taking place in certain school systems. It is hoped that this twelve-year science program will so change a child that he can better adjust to the problems of living. A picture of an entire program may help a classroom teacher to evaluate instruction at her own grade level.

Only fifteen pages are written on the subject of teaching elementary science. This fact might discourage any teacher of grades one to six from investigating beyond the table of contents. But the same number of pages is expended upon the teaching of junior high and high school science.

The answer is that the authors attack science teaching piece by piece. Steps in the teaching process, such as the gathering of material, and the organization of the material are probed one at a time. Trends in the development of each phase of the program are traced. The organization of the book is topical and historical.

What are the advantages of such organization? It permits a reader to make a slow, careful study of one phase of teaching. It lends itself to ready reference by a science specialist. It makes possible the pinpointing of weak links in the chain, showing the need for research.

Much of the material in this book is written with departmentalization of subject areas in mind. The authors even favor special rooms for teaching science in the lower grades. Such rooms are not an impossibility in any school system, but will the reader of the book ever see one? The authors finally, reluctantly, turn from the "science room," and tell how every classroom can have a science program.

One question every elementary-school teacher asks is, "What shall I do for equipment?" *Modern Science Teaching* would like the school to invest in some basic, specialized equipment. Some leaders in science education believe that all the equipment needed for any program can, and should be made by the teacher and pupils together. From the latter view, specialized equipment distracts the children from the object of the experience. Perhaps a teacher beginning in science should start with the simplest equipment. If, after some time, a teacher finds that some things can not be taught without special equipment, she might investigate the problem again.

Evaluating a child or a program in science is the most difficult part of the teachers task. This book takes a long, particular look at what is known about evaluation. Samples of each type of test, inventory, and problem situation are included. A good program of evaluation is considered by the authors to be the keystone of teaching. The conclusion that may be drawn from this book is that more remains to be discovered than is now known about this subject.

Sensory aids to science teaching are treated by a full one-third of *Modern Science Teaching*. It is the obvious hope of the authors that a science teacher will thoroughly understand every step in photography and in the use of pictures in the classroom. Methods of producing models, posters, and charts are also offered. In spite of the wealth of material, the value of sensory aids is clearly delimited. The point is made that words are the most efficient tools of teaching. A picture can increase the value of words, but can not make words obsolete.

Modern Science Teaching is perhaps not the best book for all who are interested in science teaching. But it rates a "useful" tag on the desk of one who faces hundreds of children each week, most of whom are interested in science information on a wide range of topics.

The 1953 copyright on *Teaching Science in the Elementary School* is worth noting. This copyright does not prove that the material in the book is new. But it does indicate that hard work is going on to help elementary-school teachers who desire to improve their science teaching.

This is the biggest book yet. It is largest in size and most elaborate in its investigation into the process by which a child learns science. Part one is called "The Place of Science in the Elementary School." Science is believed to be a large part of the life of any child. Step by step the development of the child is traced, and certain aspects of his development are labeled, "science."

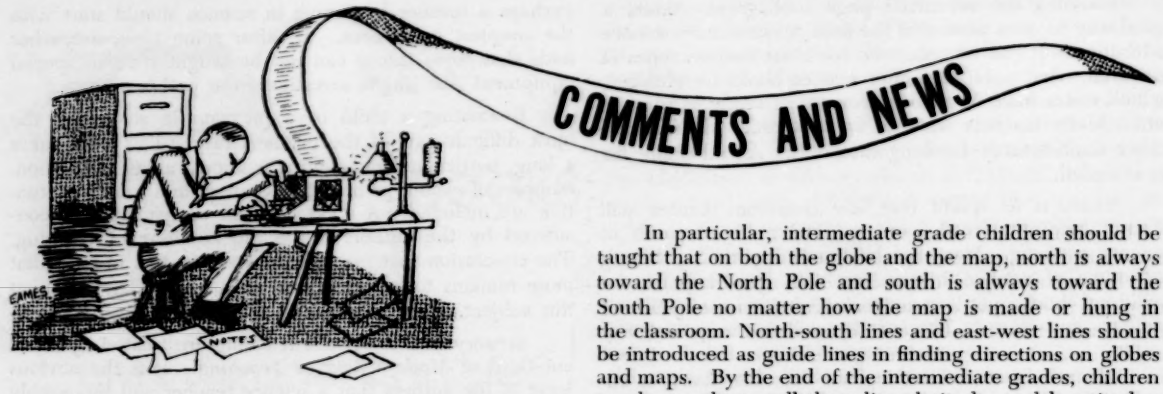
Vocabulary is up-to-date in this book. A certain level of sophistication in pedagogical terminology is assumed. The author, Raymond Burnett, feels he should avoid the possibility that he is "talking down" to a teacher.

Burnett adds a remarkable readability to the book by writing the dialogue of children in the science-minded classrooms he describes. The second part of the book is written as if the author were seated next to the reader, exploring science ideas. As each concept arises, ways to help the children are brought out.

Because of the newness of the book, it can include material on both the molecular structure of materials, and a visit inside an atom. Considerable room is also given to the production, uses and promises of atomic energy. *Teaching Science in the Elementary School* is the latest practical work on science, and the most complete book on the teaching of science in the elementary grades.

Here, then, are three professional books that are helpful to many teachers and students of teaching. One of these books may help a reader with tomorrow's problem in the teaching of science.

(William F. Read, Teacher of General Science, Junior High West, Arlington, Massachusetts.)



Increasing attentior has been given to planned programs of developing skills in recent years. The 1953 Yearbook of the National Council for the Social Studies (1201 Sixteenth St., N.W., Washington, D. C.) is titled "Skills in the Social Studies." At the annual meeting of the National Council in Buffalo in late November an important portion of the total program was devoted to sectional groups discussing various phases of skills development.

The new Yearbook gives specific and detailed help in teaching skills from the primary grades through high school. The nature of some of the material is indicated in such chapter headings as: "Locating and Gathering Information;" "Organizing and Evaluating Information;" "Reading and Listening Skills;" "Speaking and Writing Skills;" "Interpreting Maps and Globes;" "Interpreting Material Presented in Graphic Form;" "Developing a Sense of Time and Chronology;" "Participating in Group Undertakings."

Much has appeared in the literature on the teaching of social studies concerning the interpretation of maps and globes. The Yearbook chapter on that subject presents in excellent fashion very helpful steps in the process of teaching that general skill. It lists six skills that must be developed and gives definite suggestions on how to do it. The skills are identified as:

1. The ability to orient the map and to note directions
2. The ability to recognize the scale of a map and to compute distances
3. The ability to locate places on maps and globes
4. The ability to express relative location
5. The ability to read map symbols
6. The ability to compare maps and to make inferences

Gradations in the development of each of these skills has been suggested throughout the chapter by showing which aspects can and should be developed in the primary grades, then the intermediate grades, the junior high school, and the senior high school.

In summarizing the chapter as it applies to the intermediate grades the writers say:

Much attention should be given to the six map reading skills in the intermediate grades. By this time the children should have learned the cardinal directions and the intermediate directions. They should know how to orient a map, especially the street map of their own community as well as commonly used road maps.

In particular, intermediate grade children should be taught that on both the globe and the map, north is always toward the North Pole and south is always toward the South Pole no matter how the map is made or hung in the classroom. North-south lines and east-west lines should be introduced as guide lines in finding directions on globes and maps. By the end of the intermediate grades, children can be taught to call these lines latitudes and longtitudes, or meridians and parallels.

By the time the child has reached the intermediate grades he should be ready to compute and express distances in terms of simple linear measurements. Exercises should call for drawing maps to scale. The use of the graphic scale should be introduced and used to measure distances on maps. Some training should be given in visualizing the extent of area. The area of some well known political unit such as a state should be fixed in the mind of the student at some given scale. He then should apply this fixed area to other areas drawn on the same scale. Further experience should be given in developing a sense of ground distance.

The lines of latitude and longtitude can be used to locate places on globes and maps. Much practice should be given to the development of this skill in the intermediate grades.

Also in the intermediate grades, children should continue to work with the concept of relative location. Location relative to major elements of the physical environment should be stressed, and as cities are introduced attention should be called to their location relative to physical conditions and other cultural features.

It is also in Grades 4, 5 and 6 that many symbols and terms used on maps should be taught. In doing this children should come to understand that every map symbol stands for a given feature. They should be given opportunity to visualize and describe the real landscape as depicted on maps. At this level pictorial and semi-pictorial symbols should be used whenever possible, but abstract symbols can be introduced.

Finally children should be asked to make inferences from maps and to compare maps to note the area relationships of certain phenomena. In almost every social studies unit, children should discuss and explain the distribution of physical and cultural features by comparing maps which give different facts about the same area.

This very brief summary of only a small part of one chapter is scarcely suffiicent to show the actual helps that exist in the Yearbook for the classroom teacher and those who work with classroom teachers. It gives but a taste of what is in store for the reader.

Possession of skills give an individual tools that are invaluable. Children need to have and feel the power that attainment of skills commensurate with their maturity level will give them. In general, we have not given the attention to the development of skills in the social studies that we should. This Yearbook is a must for every professional library provided it stays off the shelves and in the hands of teachers.

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